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Stockpile and Post-Remedial
Excavation Confirmation Report
Parcel A, Report No. 10

Boeing Realty Corporation C-6 Facility
Los Angeles, California

March 1998



MONTGOMERY WATSON

**STOCKPILE AND POST-REMEDIAL
EXCAVATION CONFIRMATION REPORT
PARCEL A
REPORT NO. 10**

**BOEING REALTY CORPORATION C-6 FACILITY
LOS ANGELES, CALIFORNIA**

March 1998

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SECTION 1.0

INTRODUCTION

In October 1996, Montgomery Watson (Montgomery) was retained by McDonnell Douglas Realty Company, now the Boeing Realty Corporation (BRC), to assist with the redevelopment of Parcel A (the Site) of their C-6 Facility located in Los Angeles, California. Figure 1 presents the C-6 Facility. Figure 2 delineates the Site. The Site was formerly used to manufacture and store aircraft parts.

1.1 OVERVIEW

The Site consists of the northernmost quarter of the C-6 Facility, encompassing approximately 50 acres. Demolition of the following buildings has occurred: Building 29, 33, 34, 36, 37, 40, 41, 43/44, 45, 57, 58, 61, 66-A, and 67.

Information gathered during the data compilation and evaluation phase of this project indicated the presence of petroleum products and other chemicals of concern in the surface and subsurface.

A soil sampling and remedial excavation effort was conducted in conjunction with the removal of foundations, slabs, and below-ground structures. The purpose of this effort was to assess soil quality and remove soil affected with petroleum hydrocarbons and other chemicals of concern in preparation for redevelopment of the Site. Soil which was determined to be affected with petroleum hydrocarbons and other chemicals was excavated and placed into Land Treatment Units at the Site. Confirmation samples were collected along the floor of each remedial excavation to confirm that the surface soil (upper 12 feet) met soil screening criteria at sample locations.

Excavated soil and confirmation samples discussed in this report were generated from six remedial excavations conducted at six different locations at the Site.

1.2 PURPOSE AND OBJECTIVES

The lead agency for this project is the Los Angeles Regional Water Quality Control Board (RWQCB). The process of screening excavated soil and confirming *in situ* soil quality as presented in this document has been approved by the RWQCB. Following the initial review and implementation of this process, the RWQCB has allowed BRC to undertake excavation and backfilling operations without intermittent agency review. All BRC decisions based upon the approved soil screening process are documented for final agency review and approval. This approach was developed to expedite the soil quality evaluation process, and this report has been prepared to document the process used by BRC to evaluate excavated and residual soil at Site locations discussed herein.

Specifically, the purpose and objectives of this report are:

- 1) To document the quality of the stockpiled soil generated from remedial excavations according to the Facility-wide soil screening criteria, and the process by which the stockpiled soils were divided into two categories: (a) soils requiring treatment or off-site disposal, and (b) soils suitable for use as construction backfill at the Site.
- 2) To document that surface soil (upper 12 feet) in each remedial excavation meets the established soil screening criteria.

SECTION 2.0

REMEDIAL EXCAVATIONS

The southeastern portion of the Site is known as the "Panhandle" to Parcel A. This report discusses six remedial excavations conducted at six different locations within the Panhandle. A description of each remedial excavation location is presented below in the order in which excavation activities occurred.

Underground Storage Tank East of Building 45

During Panhandle demolition activities, a 12,000-gallon underground storage tank (UST) was removed. The UST was located east of Building 45 and was formally used for fire run-off containment. A feeder pipe located beneath Building 45 entered the UST from the east. A remedial excavation was conducted when affected soil was discovered beneath the feeder pipe within the Building 45 footprint. This remedial excavation was recorded using the following nomenclature:

"Building 45 Tank" (B45T) - Remedial Excavation (RE) - Chronological Number (#)
e.g., B45T-RE-1

Open Area No. 2

Open Area No. 2 refers to open areas located within the Panhandle. Three remedial excavations were conducted where hot spot or grid sampling results within Open Area No. 2 indicated the presence of affected soil. These remedial excavations were recorded using the following nomenclature:

Open Area No. 2 (OA2) - Remedial Excavation (RE) - Chronological Number (#)
e.g., OA2-RE-1

Building 41

Building 41 was formally a boiler house used to service the facility. A remedial excavation was conducted when affected soil was discovered during the Building 41 demolition. This remedial excavation was recorded using the following nomenclature:

"Building #" (B41) - Remedial Excavation (RE) - Chronological Number (#)
e.g., B41-RE-2

Underground Sump East of Building 66A

A concrete slab located west of Building 66A was formally used as a cleaning area; the cleaning area drained to a washdown sump located immediately north of the concrete pad. A remedial excavation was conducted when affected soil was discovered in the washdown sump area. This remedial excavation was recorded using the following nomenclature:

“Building 66A” (B66A) - Remedial Excavation (RE) - Chronological Number (#)
e.g., B66A-RE-1

The location of each remedial excavation discussed in this report is presented in Figure 3. A 20-foot by 20-foot grid was used to reference the locations of the remedial excavations.

Pertinent information related to the remedial excavations and the associated excavated soil discussed in this report is presented below.

Excavation	Approximate Volume	Date of Excavation	Excavated Soil Location
B45T-RE-1	18 cu yds	16 Dec 97	West of Site access road.
OA2-RE-1	18 cu yds	16 Dec 97	West of Site access road.
OA2-RE-2	72 cu yds	16 Dec 97	West of Site access road.
OA2-RE-3	72 cu yds	17 Dec 97	West of Site access road.
B41-RE-2	36 cu yds	17 Dec 97	West of Site access road.
B66A-RE-1	108 cu yds	17 Dec 97	West of Site access road.

2.1 SOIL SAMPLING

Grid sampling, hot spot sampling, and confirmation sampling have been employed at the remedial excavations discussed in this report. Detailed procedures for these activities are outlined in the *Sampling and Analysis Plan for Demolition Activities at the Douglas Aircraft Company C-6 Facility* prepared by Integrated Environmental Services, Inc. (IESI, 1997(a)) which has been reviewed and approved by the RWQCB. In addition, Land Treatment Unit sampling was performed on the excavated material. These procedures can be summarized as follows:

2.1.1 Grid Sampling

Grid sampling was collected at predetermined, regular intervals of a grid placed over the Panhandle. A 20-foot by 20-foot grid was employed.

Grid samples were collected by first exposing “fresh” soil beneath the surface using a stainless steel utensil or similar device. A photoionization detector (PID) was used to measure headspace organic vapor concentrations in the freshly exposed soil at each grid node. Soil samples were collected for analysis where at least one of the following conditions

existed: 1) the headspace volatile organic compound (VOC) reading exceeded 5 ppm, (2) areas where staining of the soil was visible, or (3) areas where odors were noticeable.

Soil samples were collected for analysis in pre-cleaned, stainless steel sleeves by driving the sleeve into the soil with a rubber mallet or drive sampler. The ends of the sleeves were then covered with Teflon film and secured with plastic end caps. A unique sample identification using the following nomenclature was written in indelible ink on a sample label and attached to the sleeve.

Open Area No. 2 (OA2) - Grid Coordinate (alpha-numeric) - Sample Depth (feet)
e.g., OA2-A.6-52-1'

The grid coordinate system used to identify sample locations in the Panhandle is presented in Figure 3.

Sample sleeves were placed in a cooler with blue ice and transported under chain-of-custody to a State-certified laboratory for analysis. Grid samples have been analyzed according to the analytical schedule presented in Table 1.

Grid sample locations discussed in this report have been subsequently excavated and data collected from these samples are considered representative of the corresponding excavated soil quality.

2.1.2 Hot Spot Sampling

Hot spot sampling was conducted at predetermined locations where former items of concern were located, and at other locations where demolition activities revealed soil which may have been affected by petroleum hydrocarbons or other chemicals of concern.

Hot spot samples were collected by first exposing "fresh" soil beneath the surface using a stainless steel utensil or similar device. A PID was used to measure headspace organic vapor concentrations in the freshly exposed soil at each location. Soil samples were collected for analysis where at least one of the following conditions existed: 1) the headspace VOC reading exceeded 5 ppm, (2) areas where staining of the soil was visible, or (3) areas where odors were noticeable.

Soil samples were collected for analysis in pre-cleaned, stainless steel sleeves by driving the sleeve into the soil with a rubber mallet or drive sampler. The ends of the sleeves were then covered with Teflon film and secured with plastic end caps. A unique sample identification using the following nomenclature was written in indelible ink on a sample label and attached to the sleeve:

Building/Area ID - Grab Sample (GS) - Chronological Number (#) - Sample Depth (feet)
e.g., B45T-GS-4-2'

Sample sleeves were placed in a cooler with blue ice and transported under chain-of-custody to a State-certified laboratory for analysis. Hot spot samples have been analyzed according to the analytical schedule presented in Table 1.

Hot spot sample locations discussed in this report have been subsequently excavated and data collected from these samples are considered representative of the corresponding excavated soil quality.

2.1.3 Land Treatment Unit Sampling

In a letter to IESI from the RWQCB dated October 24, 1997, the RWQCB approved submittals from BRC to remediate on-site and reuse VOC-impacted soil. Consequently, the soils excavated in the remedial excavations discussed in this report were treated in Land Treatment Units.

Soil in the Land Treatment Units was turned and aerated using a bulldozer and other heavy equipment. Headspace readings were collected periodically from the Land Treatment Units using a PID. Generally, soil samples were collected for analysis when PID readings were less than 5 ppm.

Land Treatment Unit soil samples were collected for analysis in pre-cleaned, stainless steel sleeves by driving the sleeve into the soil with a rubber mallet or drive sampler. The ends of the sleeves were then covered with Teflon film and secured with plastic end caps. A unique sample identification using the following nomenclature was written in indelible ink on a sample label and attached to the sleeve:

Panhandle (PH) - Land Treatment Unit Number (LTU#) - Grab Sample (GS) -
Chronological Number (#)

e.g., PH-LTU1-GS-1

Sample sleeves were placed in a cooler with blue ice and transported under chain-of-custody to a State-certified laboratory for analysis.

Land Treatment Unit samples were analyzed according to the analytical schedule presented in Table 1.

2.1.4 Confirmation Sampling

Confirmation sampling was conducted to ensure that residual surface soil (upper 12 feet) met soil screening criteria at each excavation. Confirmation sampling was conducted at the floor of each excavation.

Generally, soil removal continued at a particular location until the following conditions were met: 1) the headspace VOC reading in freshly exposed soil was less than or equal to 5 ppm, and soil staining was not visible, and odors were not noticeable, or 2) the maximum excavation depth of 12 feet had been reached. A confirmation sample was collected when

these conditions were met. Iterations of additional soil excavation were conducted as required until confirmation sample analytical data indicated that *in situ* soil quality met the soil screening criteria established in Section 3.1 of this report, or the maximum excavation depth of 12 feet had been reached.

Confirmation soil samples were collected by first exposing "fresh" soil beneath the surface of a wall and floor of an excavation using a stainless steel utensil or similar device. Soil samples were collected for analysis in pre-cleaned, stainless steel sleeves by driving the sleeve into the soil with a rubber mallet or drive sampler. The ends of the sleeves were then covered with Teflon film and secured with plastic end caps. A unique sample identification using the following nomenclature was written in indelible ink on a sample label and attached to the sleeve:

Building/Area ID - Grab Sample (GS) - Chronological Number (#) - Sample Depth (feet)
e.g., B45T-GS-5-2'

Sample sleeves were placed in a cooler with blue ice and transported under chain-of-custody to a State-certified laboratory for analysis. Confirmation samples have been analyzed according to the analytical schedule presented in Table 1; however, some confirmation sample analyses were limited to target-specific chemicals once such analytes were identified either through previous sampling activities or historical Site knowledge.

2.2 SOIL EXCAVATION

Remedial excavation to remove affected soil was conducted when one of the following conditions was discovered: (1) elevated PID readings greater than 5 ppm in hot spot samples, (2) visible staining, and (3) noticeable odors.

Remedial excavations were performed using heavy equipment (excavators, scrapers, front-end loaders, end-dump trucks) associated with the building demolition effort. Air monitoring in accordance with South Coast Air Quality Management District Rule 1166 was conducted throughout remedial excavation activities.

The maximum depth of any excavation was approximately 12 feet below grade. Excavated soil was segregated based on the location from where it was removed. Land Treatment Units were placed on asphalt or plastic sheeting. The locations of the Land Treatment Units are presented in Figure 4.

2.3 LAND TREATMENT UNIT SOIL QUALITY

Six remedial excavations were conducted at six different locations. Soil removed from five remedial excavations (B45T-RE-1, OA2-RE-1, OA2-RE-2, B41-RE-2, and B66A-RE-1) was combined to create Land Treatment Unit PH-LTU-1A. Soil from another remedial excavation (OA2-RE-3) was visually more impacted than soil removed from the other five remedial excavations and was treated separately as Land Treatment Unit PH-LTU-1B.

2.3.1 B45T-RE-1 Excavated Soil

Soil removal at remedial excavation B45T-RE-1 was conducted on December 16, 1997.

Approximately 18 cubic yards of soil associated with this excavation was removed with an excavator and placed adjacent to the excavation. Scrapers subsequently moved this excavated soil to Land Treatment Unit PH-LTU-1A, located west of the Site access road as presented in Figure 4.

The following type of sample was collected and analyzed to evaluate the soil quality in B45T-RE-1 excavated soil:

- Excavated hot spot sample

One hot spot sample was collected at the location presented in Figure 5; the area around this location was later excavated. The analytical data for this sample are summarized in Table 2.

A complete set of laboratory analytical reports is presented in Appendix A-1.

2.3.2 OA2-RE-1 Excavated Soil

Soil removal at remedial excavation OA2-RE-1 was conducted on December 16, 1997.

Approximately 18 cubic yards of soil associated with this excavation was removed with an excavator and placed adjacent to the excavation. Scrapers subsequently moved this excavated soil to Land Treatment Unit PH-LTU-1A, located west of the Site access road as presented in Figure 4.

The following type of sample was collected and analyzed to evaluate the soil quality in OA2-RE-1 excavated soil:

- Excavated grid sample

One grid sample was collected at the location presented in Figure 5; the area around this location was later excavated. The analytical data for this sample are summarized in Table 3.

A complete set of laboratory analytical reports is presented in Appendix A-2.

2.3.3 OA2-RE-2 Excavated Soil

Soil removal at remedial excavation OA2-RE-2 was conducted on December 16, 1997.

Approximately 72 cubic yards of soil associated with this excavation was removed with an excavator and placed adjacent to the excavation. Scrapers subsequently moved this excavated soil to Land Treatment Unit PH-LTU-1A, located west of the Site access road as presented in Figure 4.

The following type of sample was collected and analyzed to evaluate the soil quality in OA2-RE-2 excavated soil:

- Excavated hot spot sample

One hot spot sample was collected at the location presented in Figure 5; the area around this location was later excavated. The analytical data for this sample are summarized in Table 4.

A complete set of laboratory analytical reports is presented in Appendix A-3.

2.3.4 OA2-RE-3 Excavated Soil

Soil removal at remedial excavation OA2-RE-3 was conducted on December 17, 1997.

Approximately 72 cubic yards of soil associated with this excavation was removed with an excavator and placed adjacent to the excavation. Scrapers subsequently moved this excavated soil to Land Treatment Unit PH-LTU-1B, located west of the Site access road as presented in Figure 4.

The following types of samples were collected and analyzed to evaluate the soil quality in OA2-RE-3 excavated soil:

- Excavated grid sample
- Land Treatment Unit sample

One grid sample was collected at the location presented in Figure 5; the area around this location was later excavated. The analytical data for this sample are summarized in Table 5.

One Land Treatment Unit sample was collected at the location presented in Figure 4. Analytical data for this sample are summarized in Table 6

A complete set of laboratory analytical reports for the excavated hot spot sample is presented in Appendix A-2; laboratory analytical reports for the Land Treatment Unit sample is presented in Appendix A-5.

2.3.5 B41-RE-2 Excavated Soil

Soil removal at remedial excavation B41-RE-2 was conducted on December 17, 1997.

Approximately 36 cubic yards of soil associated with this excavation was removed with an excavator and placed adjacent to the excavation. Scrapers subsequently moved this excavated soil to Land Treatment Unit PH-LTU-1A, located west of the Site access road as presented in Figure 4.

The following type of sample was collected and analyzed to evaluate the soil quality in B41-RE-2 excavated soil:

- Excavated hot spot sample

One hot spot sample was collected at the location presented in Figure 5; the area around this location was later excavated. The analytical data for this sample are summarized in Table 7.

A complete set of laboratory analytical reports is presented in Appendix A-4.

2.3.6 B66A-RE-1 Excavated Soil

Soil removal at remedial excavation B66A-RE-1 was conducted on December 17, 1997.

Approximately 108 cubic yards of soil associated with this excavation was removed with an excavator and placed adjacent to the excavation. Scrapers subsequently moved this excavated soil to Land Treatment Unit PH-LTU-1A, located west of the Site access road as presented in Figure 4.

The following type of sample was collected and analyzed to evaluate the soil quality in B66A-RE-1 excavated soil:

- Excavated hot spot samples

Two hot spot samples were collected at the locations presented in Figure 5; the area around these locations was later excavated. The analytical data for these samples are summarized in Table 8.

A complete set of laboratory analytical reports is presented in Appendix A-4.

2.4 CONFIRMATION SAMPLING

2.4.1 B41-RE-1 Remedial Excavation

One confirmation sample was collected at the location presented in Figure 6. Analytical data are summarized in Table 9. A complete set of analytical data is presented in Appendix B-1.

2.4.2 OA2-RE-1 Remedial Excavation

One confirmation sample was collected at the location presented in Figure 6. Analytical data are summarized in Table 10. A complete set of analytical data is presented in Appendix B-1.

2.4.3 OA2-RE-2 Remedial Excavation

One confirmation sample was collected at the location presented in Figure 6. Analytical data are summarized in Table 11. A complete set of analytical data is presented in Appendix B-1.

2.4.4 OA2-RE-3 Remedial Excavation

One confirmation sample was collected at the location presented in Figure 6. Analytical data are summarized in Table 12. A complete set of analytical data is presented in Appendix B-2.

2.4.5 B41-RE-2 Remedial Excavation

One confirmation sample was collected at the location presented in Figure 6. Analytical data are summarized in Table 13. A complete set of analytical data is presented in Appendix B-2.

2.4.6 B66A-RE-1 Remedial Excavation

One confirmation sample was collected at the location presented in Figure 6. Analytical data are summarized in Table 14. A complete set of analytical data is presented in Appendix B-2.

SECTION 3.0

DATA SUMMARIES AND CONCLUSIONS

This section presents soil screening criteria and the methodology used throughout the project to evaluate: (1) whether the soil stockpiles were suitable for use as backfill, or required treatment and/or off-site disposal, and (2) whether all affected soil has been removed based on confirmation sample data, or if additional excavation of affected soil is warranted.

3.1 SOIL SCREENING CRITERIA

The soil screening criteria have been developed to satisfy two primary objectives: (1) residual concentrations in backfill material and surface soil must be below levels projected to impact underlying drinking water sources, and (2) residual concentration in backfill materials and surface soil must be below levels projected to potentially impact human health under future construction and commercial/industrial activities at the Site.

In accordance with these objectives, soil screening criteria were developed for both drinking water and human health protection. The development of these soil screening criteria is discussed below followed by a summary of how these values were implemented.

3.1.1 Drinking Water

The generalized hydrostratigraphic succession at the Site is as follows (Kennedy/Jenks, 1996; Dames & Moore, 1993; Department of Water Resources, 1961):

SURFACE

Bellflower Aquitard
Gage Aquifer
El Segundo Aquitard
Lynwood Aquifer

Depth to groundwater at the Site is approximately 65 feet. Hydrostratigraphic information from voluminous data collected at the neighboring Del Amo and Montrose Chemical Superfund Sites can be correlated with subsurface information collected at the Site. Hydrostratigraphic correlations suggest that the shallowest groundwater at the Site occurs in the Bellflower Aquitard, which is not recognized as a drinking water source in the region (Dames & Moore, 1993).

Although the depth to the top of the Gage Aquifer should vary from approximately 120 to 150 feet (from west to east) across the Site, the Gage Aquifer is not utilized as a source of drinking water in the region (Dames & Moore, 1993). Consequently, the shallowest drinking water resource in the region would therefore be the Lynwood Aquifer, projected to occur at the depths of approximately 210 to 240 feet (from west to east) across the Site.

Based on the depth to the first drinking water source, the following permissible concentrations to 12 feet below ground surface have been approved by the RWQCB:

Analytes	Permissible Level
TRPH	
C4 - C12	2,000 mg/kg
C13 - C22	10,000 mg/kg
C22+	50,000 mg/kg
Metals	TTLC and STLC

Notes:

TTLC: Total Threshold Limit Concentration per CCR Title 22.

STLC: Soluble Threshold Limit Concentration per CCR Title 22.

A Waste Extraction Test (WET) is performed on samples with total metal concentration(s) greater than 10 times the STLC but less than the TTLC, per CCR Title 22.

3.1.2 Human Health

Site-specific health-based soil screening values were developed by IESI using standard United States Environmental Protection Agency (USEPA) and California Environmental Protection Agency (Cal/EPA) methodologies. These values were derived assuming future commercial industrial land use with an interim construction phase. Each value will be used as a predictor of the risk posed by individual VOC, SVOC, PCB, and metal contaminants in soil. The additive effects of multiple contaminants have been accounted for by setting conservative target risk levels at 1×10^{-6} for carcinogens and 0.2 for toxicants. The final cumulative risks for all residual contaminants at the Site will be addressed in the post-remedial risk assessment. Table 15 summarizes the Site-specific health-based soil screening values to be used at the Site. A more detailed discussion of the methodologies used to derive these values has been presented in the *Health-Based Remediation Goals for Surface Soils* document (IESI, 1997(b)).

3.1.3 Evaluation Process

EXCAVATED SOIL

Soil excavated at the Site was generally subjected to the soil screening evaluation process depicted in Figure 7. This evaluation process incorporates both drinking water and human health-based criteria. Soils that failed any portion of this test were subjected to treatment

prior to use as backfill, or were disposed of off-site. Once soils passed all aspects of the evaluation procedure, they were used for backfill.

Additionally, metal concentration(s) in stockpiled soils were used to further characterize the waste soil as follows:

- a) Excavated soils were classified as non-RCRA hazardous waste if representative soil samples contained any metal in total concentration equal to or greater than its respective TTLC per CCR Title 22.
- b) Representative soil samples were analyzed for soluble metal concentration using the Waste Extraction Test (WET) if the total concentration of any metal was equal to or greater than 10 times its respective STLC but less than its TTLC per CCR Title 22. Excavated soil was classified as non-RCRA hazardous waste if representative soil samples contained any metal in soluble concentration using the WET equal to or greater than its respective STLC per CCR Title 22.
- c) Additionally, representative soil samples which were analyzed using the WET were also analyzed for soluble metal concentrations using the Toxic Characteristic Leaching Procedure (TCLP). Excavated soil was classified as a RCRA characteristic hazardous waste if the soluble concentration of any metal using the TCLP was equal to or greater than the toxicity characteristic (TC) per CCR Title 22.

CONFIRMATION SAMPLES

Confirmation soil data at the Site were generally subjected to the soil screening evaluation process depicted in Figure 8. This evaluation process incorporates both drinking water and human health-based criteria. Additional soil excavation and/or treatment was conducted at locations where confirmation sample data failed any portion of this test, and the maximum excavation depth of 12 feet had not been reached.

3.2 EXCAVATED SOIL EVALUATIONS

Chemicals of concern at the Site can be summarized as follows:

- Petroleum hydrocarbons
- VOCs
- SVOCs
- PCBs
- Metals

The sampling and analysis program for remedial excavations discussed in this report was conservatively focused on these chemicals of concern by implementing the following analytical schedule:

- All grid and hot spot samples were analyzed for TRPH and metals.
- All grid or hot spot samples which contained TRPH in concentration greater than 10,000 mg/kg were subsequently analyzed for carbon chain length.
- Grid samples were selectively analyzed for VOCs and SVOCs, depending on the potential for occurrence of these chemicals at the sampling location.
- Hot spot samples were selectively analyzed for VOCs, SVOCs, and PCBs, depending on the potential for occurrence of these chemicals at the sampling location.
- All Land Treatment Unit samples were analyzed for metals, VOCs, and SVOCs.

Excavated soil evaluations and dispositions are discussed below and summarized in Table 16.

3.2.1 B45T-RE-1 Excavated Soil

Soil excavated from remedial excavation B45T-RE-1 was placed in Land Treatment Unit PH-LTU-1A. The data from the only soil sample associated with remedial excavation B45T-RE-1 (excavated hot spot sample B45T-GS-4-2') are presented in Table 2. These data are summarized and evaluated below.

Petroleum Hydrocarbons: TRPH were not detected.

VOCs: VOCs were not expected to be of concern at this location; therefore, VOCs were not analyzed for.

SVOCs: SVOCs were not expected to be of concern at this location; therefore, SVOCs were not analyzed for.

PCBs: PCBs were not expected to be of concern at this location; therefore, PCBs were not analyzed for.

Metals: Excavated hot spot sample B45T-GS-4-2' contained arsenic (15 mg/kg) above the Site-specific health-based soil screening value of 14 mg/kg, but did not meet or exceed TTLC or 10 times the STLC.

Conclusion: Soil removed from this remedial excavation was placed in Land Treatment Unit PH-LTU-1A. The most visually affected soil removed from any Panhandle remedial excavation presented in this report was placed in Land Treatment Unit PH-LTU-1B. For this reason, a Land Treatment Unit sample was collected only from PH-LTU-1B. Data from this Land Treatment Unit sample are presented in Table 6, and these data met the soil screening criteria presented in Section 3.1 of this report. This Land Treatment Unit sample was considered by IESI to be more representative of soil quality than any other sample associated

with the B45T-RE-1 remedial excavation. Consequently, all soil placed in Land Treatment Unit PH-LTU-1A was used as backfill material, including soil removed from the B45T-RE-1 remedial excavation.

3.2.2 OA2-RE-1 Excavated Soil

Soil excavated from remedial excavation OA2-RE-1 was placed in Land Treatment Unit LTU-1A. The data from the only soil sample associated with remedial excavation OA2-RE-1 (excavated grid sample OA2-A.6-53-1') are presented in Table 3. These data are summarized and evaluated below.

Petroleum Hydrocarbons: TRPH were detected in concentration of 540 mg/kg. This concentration did not meet or exceed the permissible limit for petroleum hydrocarbons and therefore the sample was not speciated.

VOCs: VOCs were not expected to be of concern at this location; therefore, VOCs were not analyzed for.

SVOCs: SVOCs were not expected to be of concern at this location; therefore, SVOCs were not analyzed for.

PCBs: PCBs were not expected to be of concern at this location; therefore, PCBs were not analyzed for.

Metals: Excavated grid sample OA2-A.6-53-1' contained arsenic (30 mg/kg) above the Site-specific health-based soil screening value of 14 mg/kg, but did not meet or exceed TTLC or 10 times the STLC.

Conclusion: Soil removed from this remedial excavation was placed in Land Treatment Unit PH-LTU-1A. The most visually affected soil removed from any Panhandle remedial excavation presented in this report was placed in Land Treatment Unit PH-LTU-1B. For this reason, a Land Treatment Unit sample was collected only from PH-LTU-1B. Data from this Land Treatment Unit sample are presented in Table 6, and these data met the soil screening criteria presented in Section 3.1 of this report. This Land Treatment Unit sample was considered by IESI to be more representative of soil quality than any other sample associated with the OA2-RE-1 remedial excavation. Consequently, all soil placed in Land Treatment Unit PH-LTU-1A was used as backfill material, including soil removed from the OA2-RE-1 remedial excavation.

3.2.3 OA2-RE-2 Excavated Soil

Soil excavated from remedial excavation OA2-RE-2 was placed in Land Treatment Unit PH-LTU-1A. The data from the only soil sample associated with remedial excavation OA2-RE-2 (excavated hot spot sample OA2-GS-1-1') are presented in Table 4. These data are summarized and evaluated below.

Petroleum Hydrocarbons: TRPH were detected in concentration of 1,100 mg/kg. This concentration did not meet or exceed the permissible limit for petroleum hydrocarbons and therefore the sample was not speciated.

VOCs: VOCs were not detected.

SVOCs: One SVOC was detected; however, the concentration was below the Site-specific health-based soil screening value.

PCBs: PCBs were not expected to be of concern at this location; therefore, PCBs were not analyzed for.

Metals: Excavated hot spot sample OA2-GS-1-1' contained arsenic (18 mg/kg) above the Site-specific health-based soil screening value of 14 mg/kg, but did not meet or exceed TTLC or 10 times the STLC.

Conclusion: Soil removed from this remedial excavation was placed in Land Treatment Unit PH-LTU-1A. The most visually affected soil removed from any Panhandle remedial excavation presented in this report was placed in Land Treatment Unit PH-LTU-1B. For this reason, a Land Treatment Unit sample was collected only from PH-LTU-1B. Data from this Land Treatment Unit sample are presented in Table 6, and these data met the soil screening criteria presented in Section 3.1 of this report. This Land Treatment Unit sample was considered by IESI to be more representative of soil quality than any other sample associated with the OA2-RE-2 remedial excavation. Consequently, all soil placed in Land Treatment Unit PH-LTU-1A was used as backfill material, including soil removed from the OA2-RE-2 remedial excavation.

3.2.4 OA2-RE-3 Excavated Soil

Soil excavated from remedial excavation OA2-RE-3 was placed in Land Treatment Unit PH-LTU-1B. Excavated grid and Land Treatment Unit soil samples associated with Land Treatment Unit PH-LTU-1B are presented in Table 5 and Table 6. These data are summarized and evaluated below.

Petroleum Hydrocarbons: Excavated grid sample OA2-A.6-52-1' contained TRPH in concentration of 490 mg/kg. This concentration did not meet or exceed the permissible limit for petroleum hydrocarbons and therefore the sample was not speciated. TRPH were not detected in Land Treatment Unit sample PH-LTU1-GS-1.

VOCs: One VOC was detected in Land Treatment Unit sample PH-LTU1-GS-1; however, the concentration was below the Site-specific health-based soil screening value.

SVOCs: One SVOC was detected in excavated grid sample OA2-A.6-52-1'; however, the concentration was below the Site-specific health-based soil screening value. SVOCs were not detected in Land Treatment Unit sample PH-LTU1-GS-1.

PCBs: PCBs were not expected to be of concern at this location; therefore, PCBs were not analyzed for.

Metals: Excavated grid sample OA2-A.6-52-1' contained arsenic (110 mg/kg) above the Site-specific health-based soil screening value of 14 mg/kg. This sample also exceeded the STLC when analyzed using the WET, but did not exceed the TC when analyzed using the TCLP. Land Treatment Unit sample PH-LTU1-GS-1 did not meet or exceed TTLC, 10 times the STLC, or Site-specific health-based screening values.

Conclusion: Soil removed from this excavation was the most visually affected soil removed from any Panhandle remedial excavation presented in this report; this soil was placed in Land Treatment Unit PH-LTU-1B. The 18-cubic yard portion of Land Treatment Unit PH-LTU-1B containing excavated grid sample OA2-A.6-52-1' was separated from the remainder of the Land Treatment Unit (as indicated in Figure 4). This soil will be removed from the Site by a licensed hazardous waste hauler and properly disposed as a non-RCRA hazardous waste. Off-site disposal documentation will be provided in an addendum to this report. Land Treatment Unit sample PH-LTU1-GS-1 was considered representative of the remainder of Land Treatment Unit PH-LTU-1B. The data show that soil in Land Treatment Unit PH-LTU-1B met the soil screening criteria presented in Section 3.1 of this report and therefore was used as backfill material.

3.2.5 B41-RE-2 Excavated Soil

Soil excavated from remedial excavation B41-RE-2 was placed in Land Treatment Unit PH-LTU-1A. The data from the only soil sample associated with remedial excavation OA2-RE-1 (excavated hot spot sample B41-GS-7-1') are presented in Table 7. These data are summarized and evaluated below.

Petroleum Hydrocarbons: TRPH were detected in concentration of 33 mg/kg. This concentration did not meet or exceed the permissible limit for petroleum hydrocarbons and therefore the sample was not speciated.

VOCs: One VOC was detected; however, the concentration was below the Site-specific health-based soil screening value

SVOCs: Seventeen SVOCs were detected. The concentration of benzo(a)pyrene (1.90 mg/kg) exceeded the Site-specific health-based screening value for this compound of 1.14 mg/kg.

PCBs: PCBs were not expected to be of concern at this location; therefore, PCBs were not analyzed for.

Metals: Excavated hot spot sample B41-GS-7-1' contained arsenic (22 mg/kg) above the Site-specific health-based soil screening value of 14 mg/kg, but did not meet or exceed TTLC or 10 times the STLC.

Conclusion: Soil removed from this remedial excavation was placed in Land Treatment Unit PH-LTU-1A. The most visually affected soil removed from any Panhandle remedial excavation presented in this report was placed in Land Treatment Unit PH-LTU-1B. For this reason, a Land Treatment Unit sample was collected only from PH-LTU-1B. Data from this Land Treatment Unit sample are presented in Table 6, and these data met the soil screening criteria presented in Section 3.1 of this report. This Land Treatment Unit sample was considered by IESI to be more representative of soil quality than any other sample associated with the B41-RE-2 remedial excavation. Consequently, all soil placed in Land Treatment Unit PH-LTU-1A was used as backfill material, including soil removed from the B41-RE-2 remedial excavation.

3.2.6 B66A-RE-1 Excavated Soil

Soil excavated from remedial excavation B66A-RE-1 was placed in Land Treatment Unit PH-LTU-1A. Excavated hot spot soil samples associated with remedial excavation B66A-RE-1 are presented in Table 8. These data are summarized and evaluated below.

Petroleum Hydrocarbons: The highest concentration of TRPH was 3,100 mg/kg. This concentration did not meet or exceed the permissible limit for petroleum hydrocarbons and therefore the sample was not speciated.

VOCs: Twelve VOCs were detected; however, the concentrations were below Site-specific health-based soil screening values.

SVOCs: One SVOC was detected; however, the concentration was below the Site-specific health-based soil screening value.

PCBs: PCBs were not detected.

Metals: Excavated hot spot sample B66AC1-GS-1-2' contained arsenic (21 mg/kg) above the Site-specific health-based soil screening value of 14 mg/kg, but did not meet or exceed TTLC or 10 times the STLC. Excavated hot spot sample B66AC1-GS-2-2' exceeded 10 times the STLC for chromium; however, this sample did not meet or exceed the STLC when analyzed using the WET, or the TC when analyzed using the TCLP.

Conclusion: Soil removed from this remedial excavation was placed in Land Treatment Unit PH-LTU-1A. The most visually affected soil removed from any Panhandle remedial excavation presented in this report was placed in Land Treatment Unit PH-LTU-1B. For this reason, a Land Treatment Unit sample was collected only from PH-LTU-1B. Data from this Land Treatment Unit sample are presented in Table 6, and these data met the soil screening criteria presented in Section 3.1 of this report. This Land Treatment Unit sample was considered by IESI to be more representative of soil quality than any other sample associated with the B66A-RE-1 remedial excavation. Consequently, all soil placed in Land Treatment Unit PH-LTU-1A was used as backfill material, including soil removed from the B66A-RE-1 remedial excavation.

3.3 IN-SITU SOIL QUALITY

The post-remedial excavation confirmation sampling analytical program (see Table 1) was designed to ensure that residual soils (upper 12 feet) meet the soil screening criteria.

3.3.1 B45T-RE-1 Remedial Excavation

The confirmation soil sample from B45T-RE-1 was analyzed for metals only. These data are presented in Table 9 and are summarized and evaluated below.

Metals: The sample did not meet or exceed TTLC, 10 times the STLC, or Site-specific health-based soil screening values.

Conclusion: The data indicate that the residual soils in the B45T-RE-1 excavation met the soil screening criteria established in Section 3.1 of this report. Accordingly, this remedial excavation was backfilled.

3.3.2 OA2-RE-1 Remedial Excavation

The confirmation soil sample from OA2-RE-1 was analyzed for metals only. These data are presented in Table 10 and are summarized and evaluated below.

Metals: The sample did not meet or exceed TTLC, 10 times the STLC, or Site-specific health-based soil screening values.

Conclusion: The data indicate that the residual soils in the OA2-RE-1 excavation met the soil screening criteria established in Section 3.1 of this report. Accordingly, this remedial excavation was backfilled.

3.3.3 OA2-RE-2 Remedial Excavation

The confirmation soil sample from OA2-RE-2 was analyzed for metals only. These data are presented in Table 11 and are summarized and evaluated below.

Metals: The sample did not meet or exceed TTLC, 10 times the STLC, or Site-specific health-based soil screening values.

Conclusion: The data indicate that the residual soils in the OA2-RE-2 excavation met the soil screening criteria established in Section 3.1 of this report. Accordingly, this remedial excavation was backfilled.

3.3.4 OA2-RE-3 Remedial Excavation

The confirmation soil sample from OA2-RE-3 was analyzed for metals only. These data are presented in Table 12 and are summarized and evaluated below.

Metals: The sample did not meet or exceed TTLC, 10 times the STLC, or Site-specific health-based soil screening values.

Conclusion: The data indicate that the residual soils in the OA2-RE-3 excavation met the soil screening criteria established in Section 3.1 of this report. Accordingly, this remedial excavation was backfilled.

3.3.5 B41-RE-2 Remedial Excavation

The confirmation soil sample from B41-RE-2 was analyzed for SVOCs and metals only. These data are presented in Table 13 and are summarized and evaluated below.

SVOCs: Nine SVOCs were detected; however, the concentrations were below Site-specific health-based soil screening values.

Metals: The sample did not meet or exceed TTLC, 10 times the STLC, or Site-specific health-based soil screening values.

Conclusion: The data indicate that the residual soils in the B45T-RE-1 excavation met the soil screening criteria established in Section 3.1 of this report. Accordingly, this remedial excavation was backfilled.

3.3.6 B66A-RE-1 Remedial Excavation

The confirmation soil sample from B66A-RE-1 was analyzed for metals only. These data are presented in Table 14 and are summarized and evaluated below.

Metals: The sample did not meet or exceed TTLC, 10 times the STLC, or Site-specific health-based soil screening values.

Conclusion: The data indicate that the residual soils in the B66A-RE-1 excavation met the soil screening criteria established in Section 3.1 of this report. Accordingly, this remedial excavation was backfilled.

SECTION 4.0

REFERENCES

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Figures

Figures



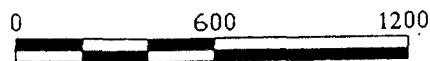
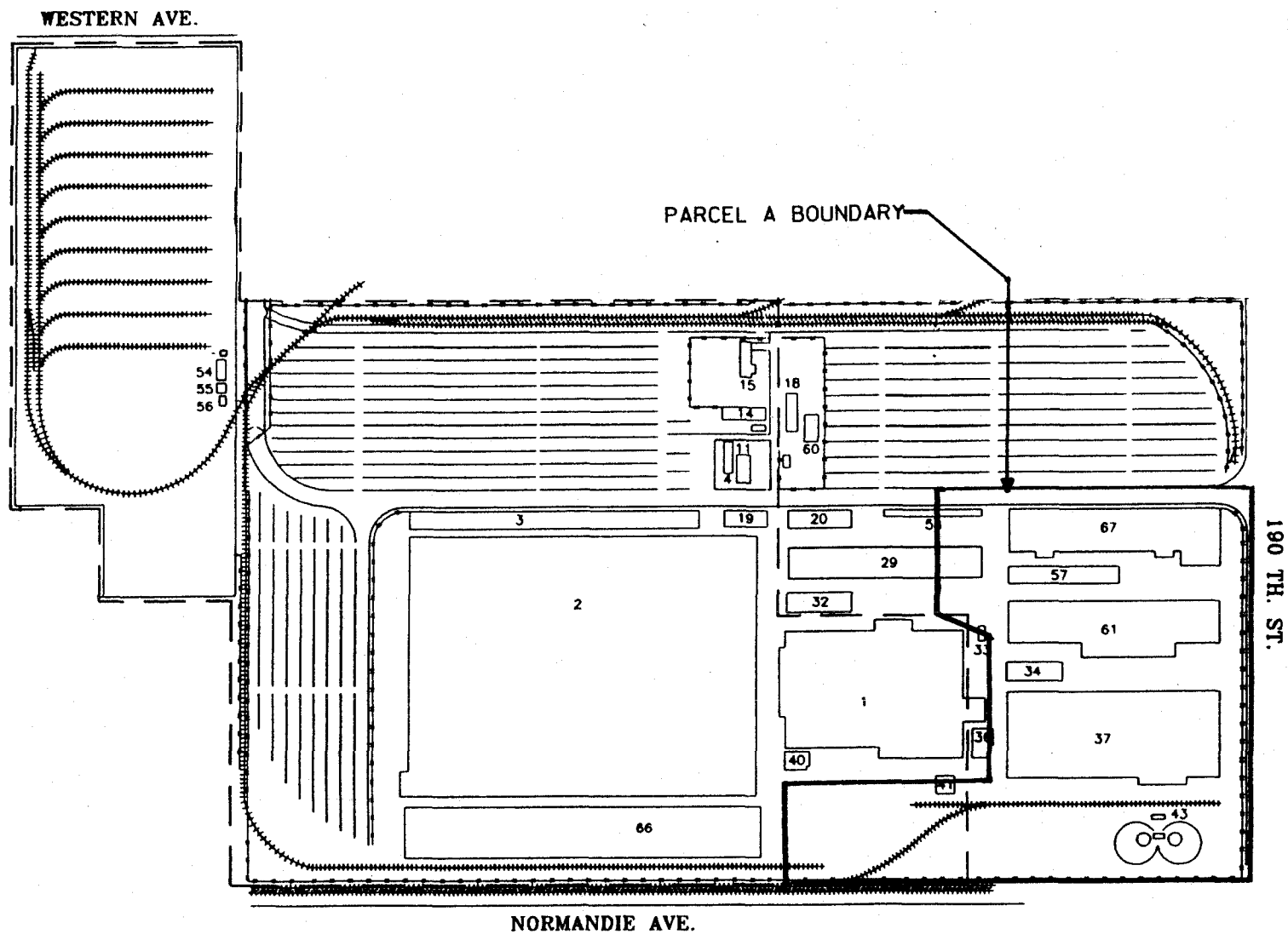
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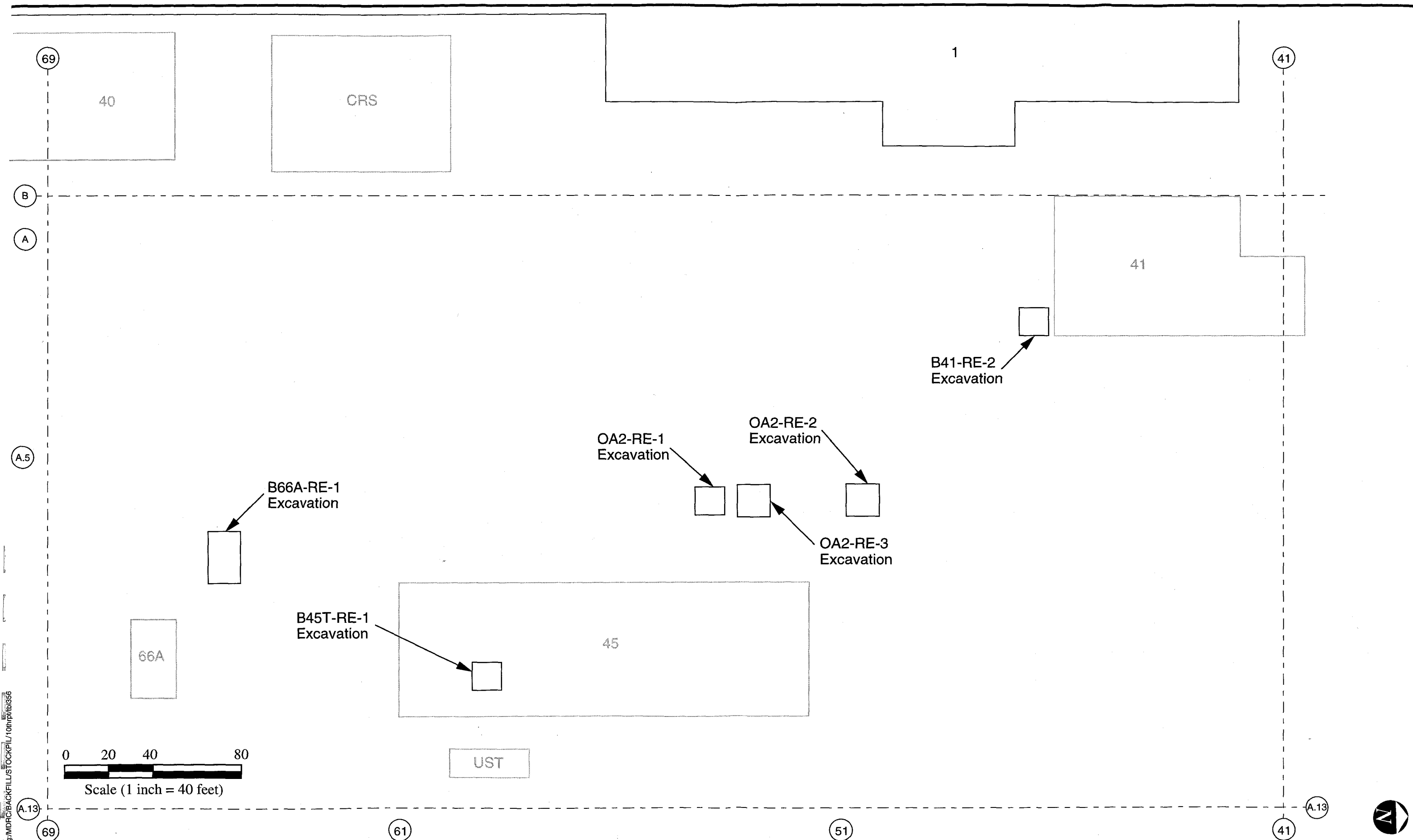
C-6 FACILITY MAP

FIG. 1



Approximate Scale: 1"=600'

Base map developed from Facility Layout and Subject Property Map by Kennedy/Jenks Consultants, May 1996.



BOEING REALTY CORPORATION
C-6 FACILITY

Remedial Excavations B45T-RE-1, OA2-RE-1, OA2-RE-2, OA2-RE-3, B41-RE-2, and B66A-RE-1 Locations

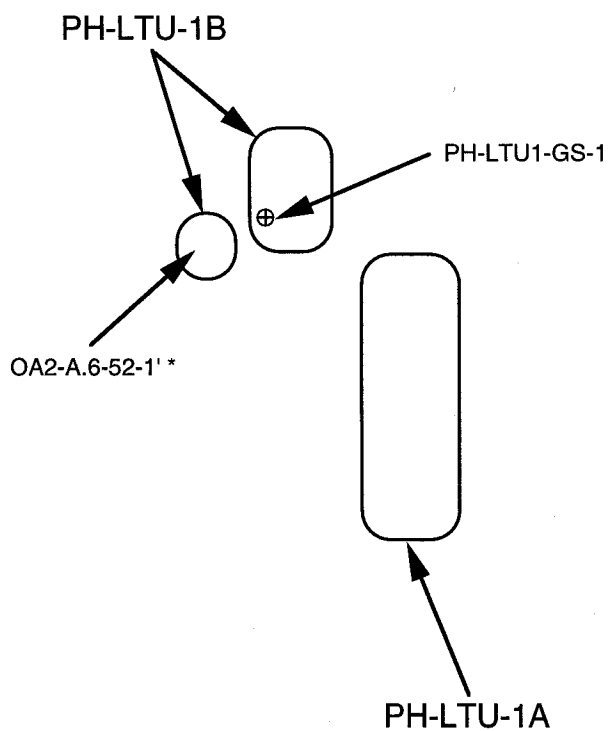
FIGURE 3

g:\MDCR\BACKFILL\STOCKPIL\10th\p\16386
BOE-C6-0063041

Not to Scale

* See Figure 5 for this Grid Sample Location

W. 190th St

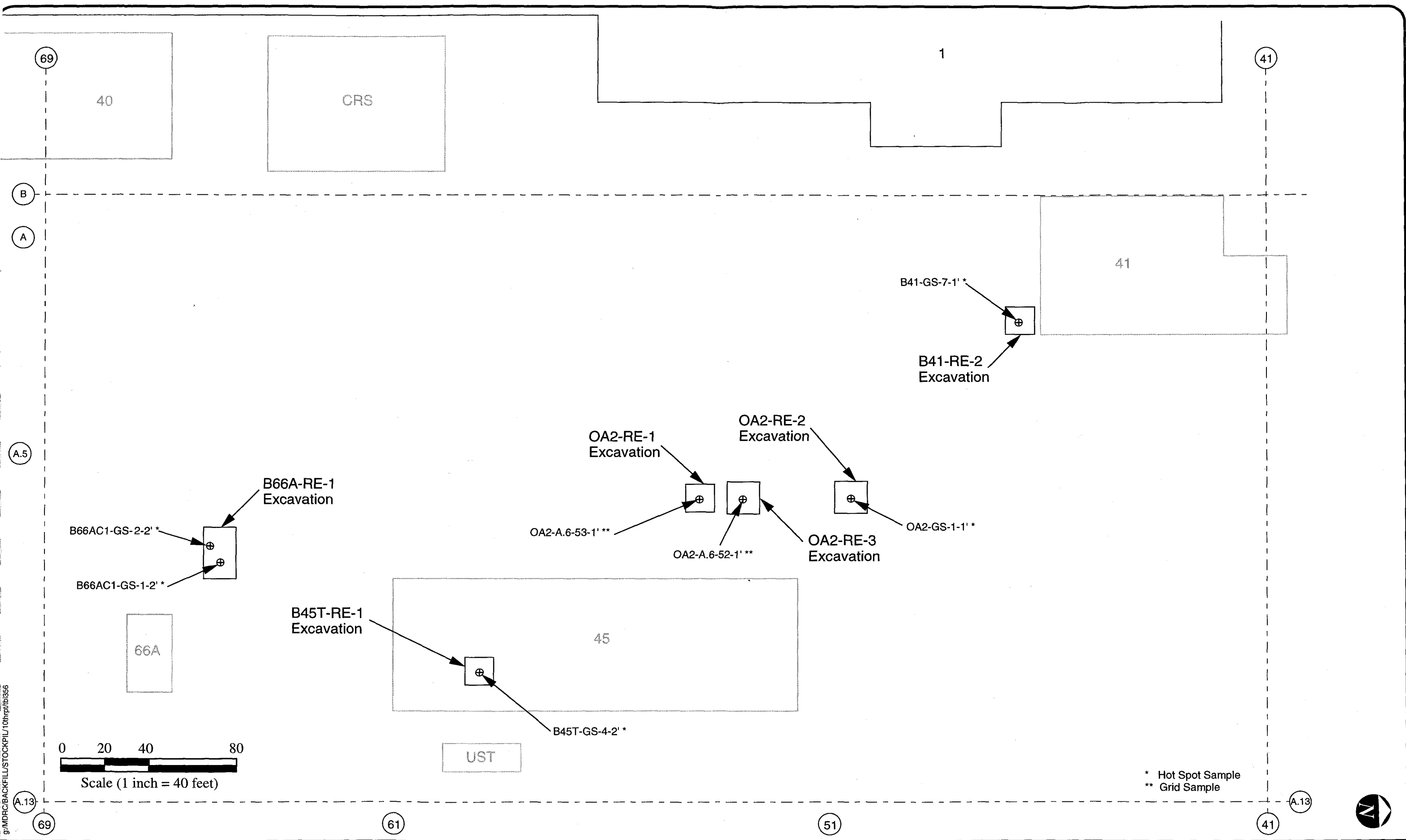


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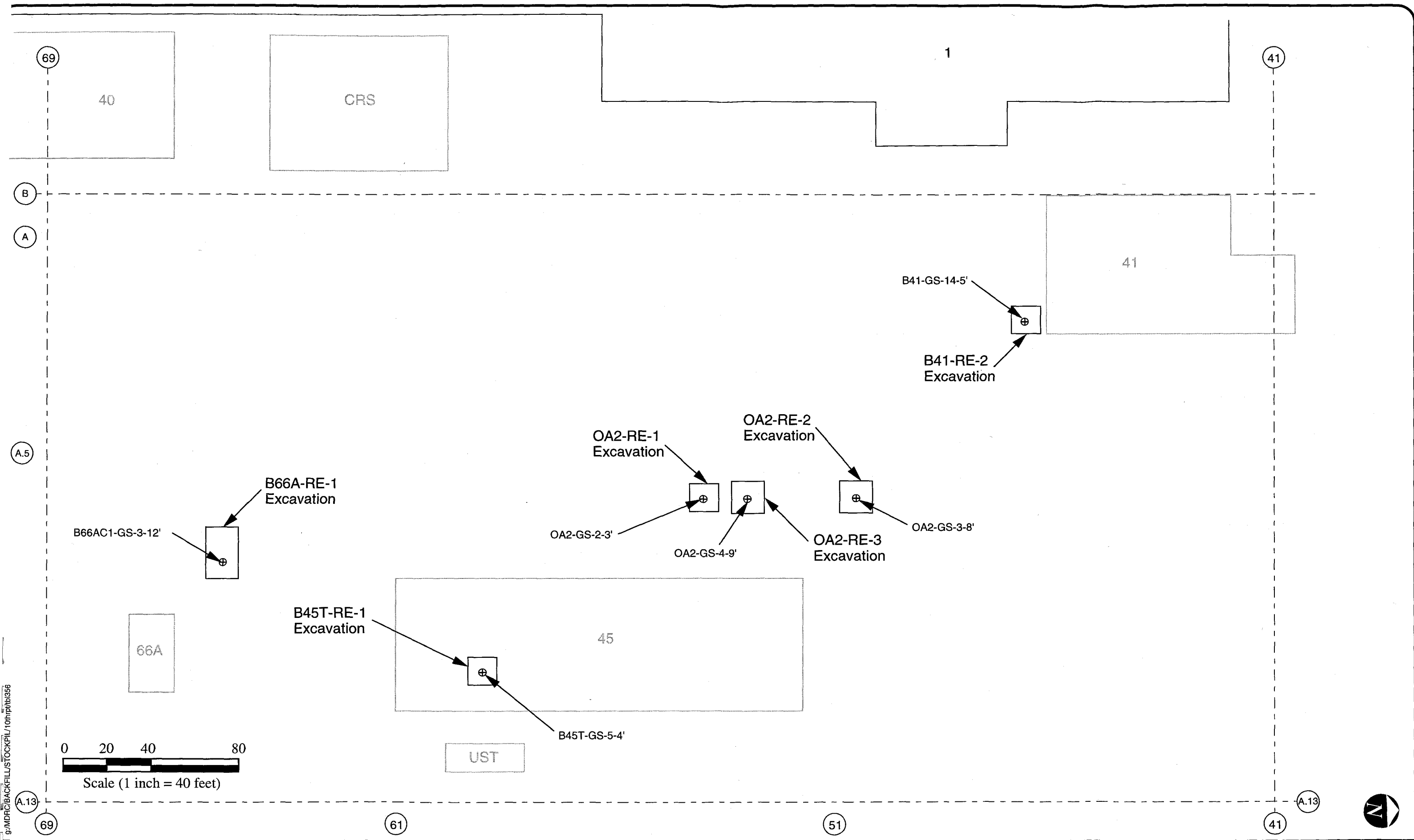


BOEING REALTY CORPORATION
C-6 FACILITY
**Land Treatment Units PH-LTU-1A and PH-LTU-1B
and Sample Locations**

FIGURE 4



BOEING REALTY CORPORATION
C-6 FACILITY
Excavated Hot Spot and Grid Sample Locations

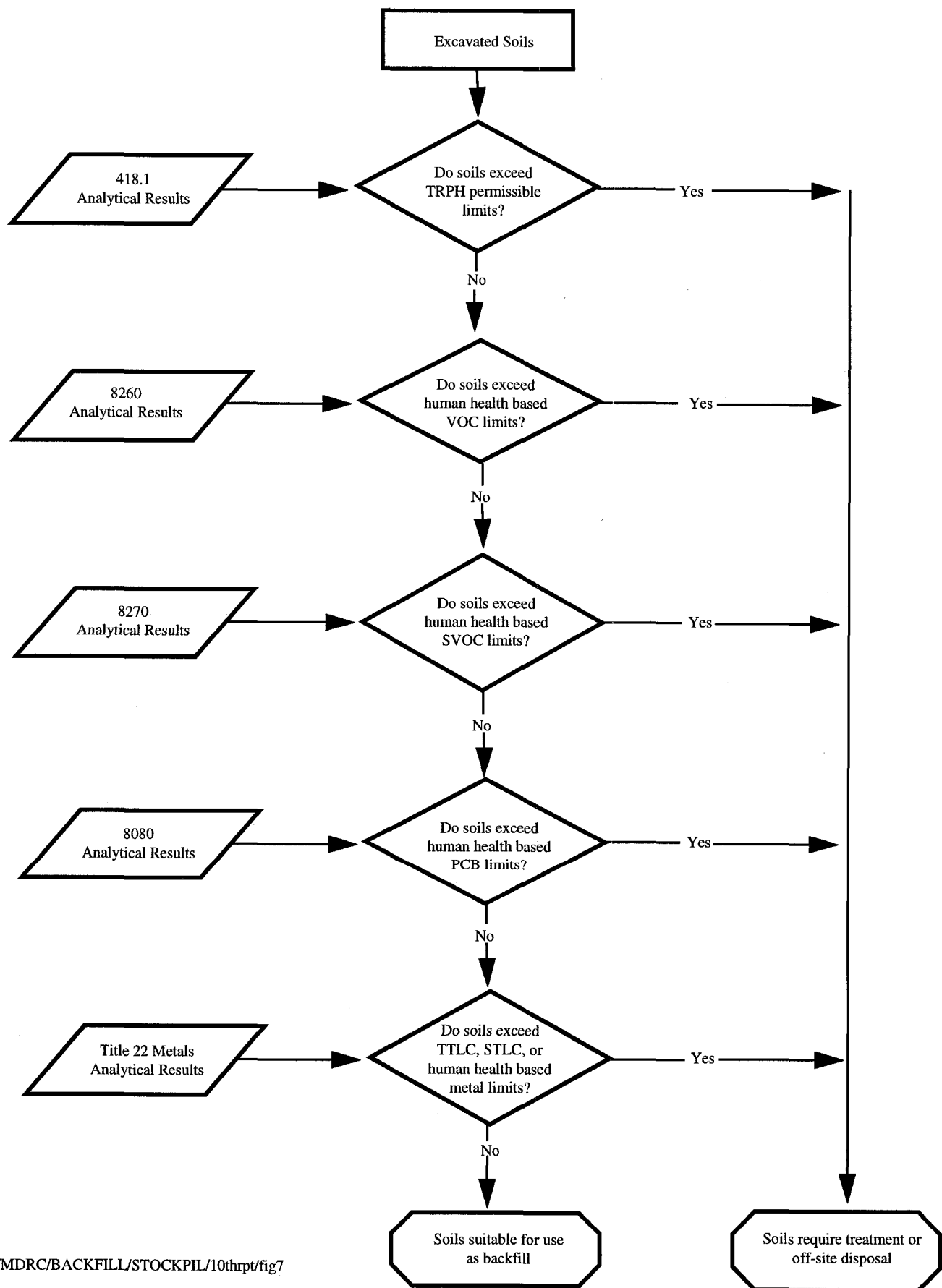


BOEING REALTY CORPORATION
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Confirmation Sample Locations

FIGURE 6

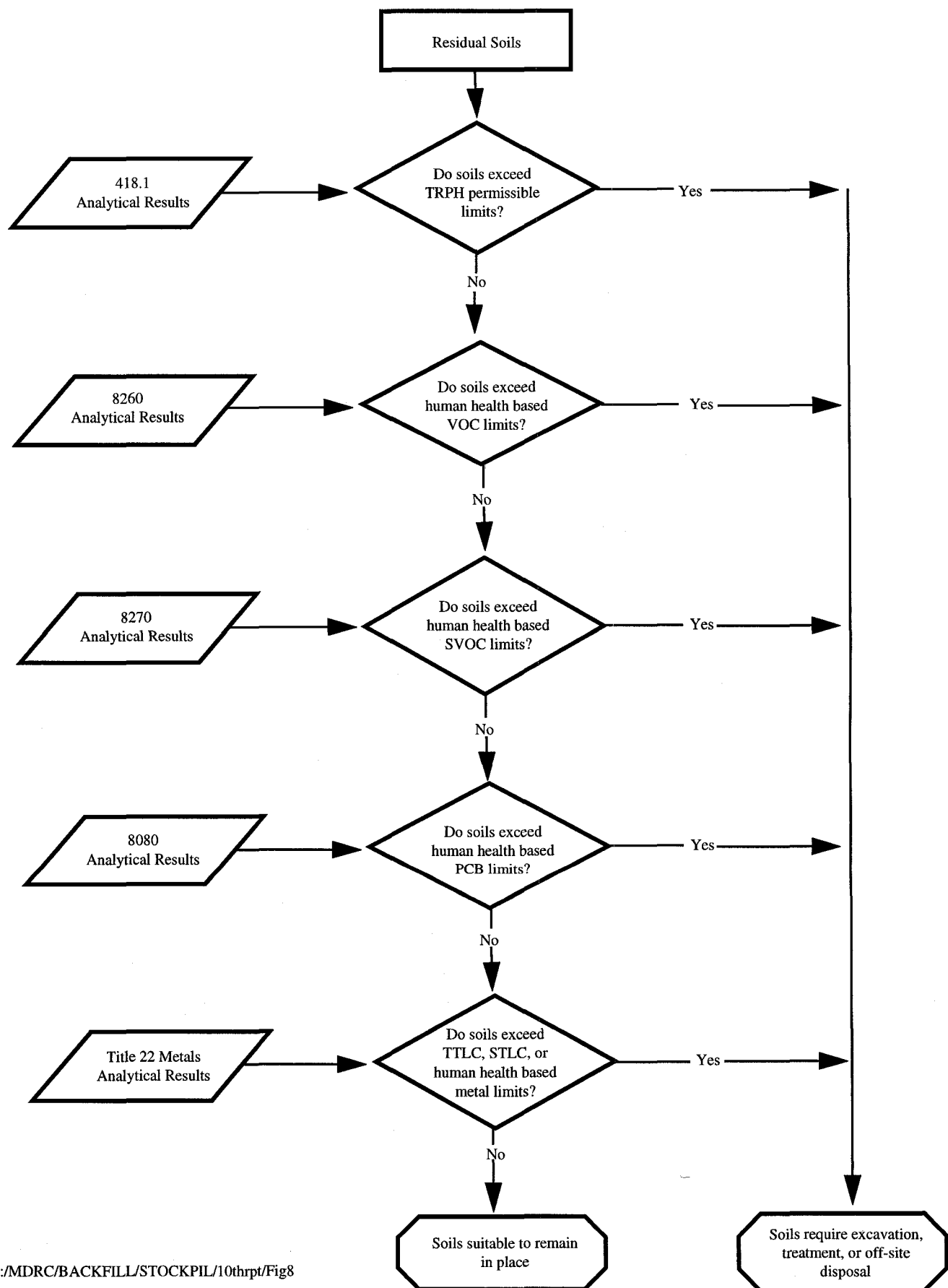
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BOE-C6-0063044

FIGURE 7
Soil Screening Evaluation Process - Excavated Soil



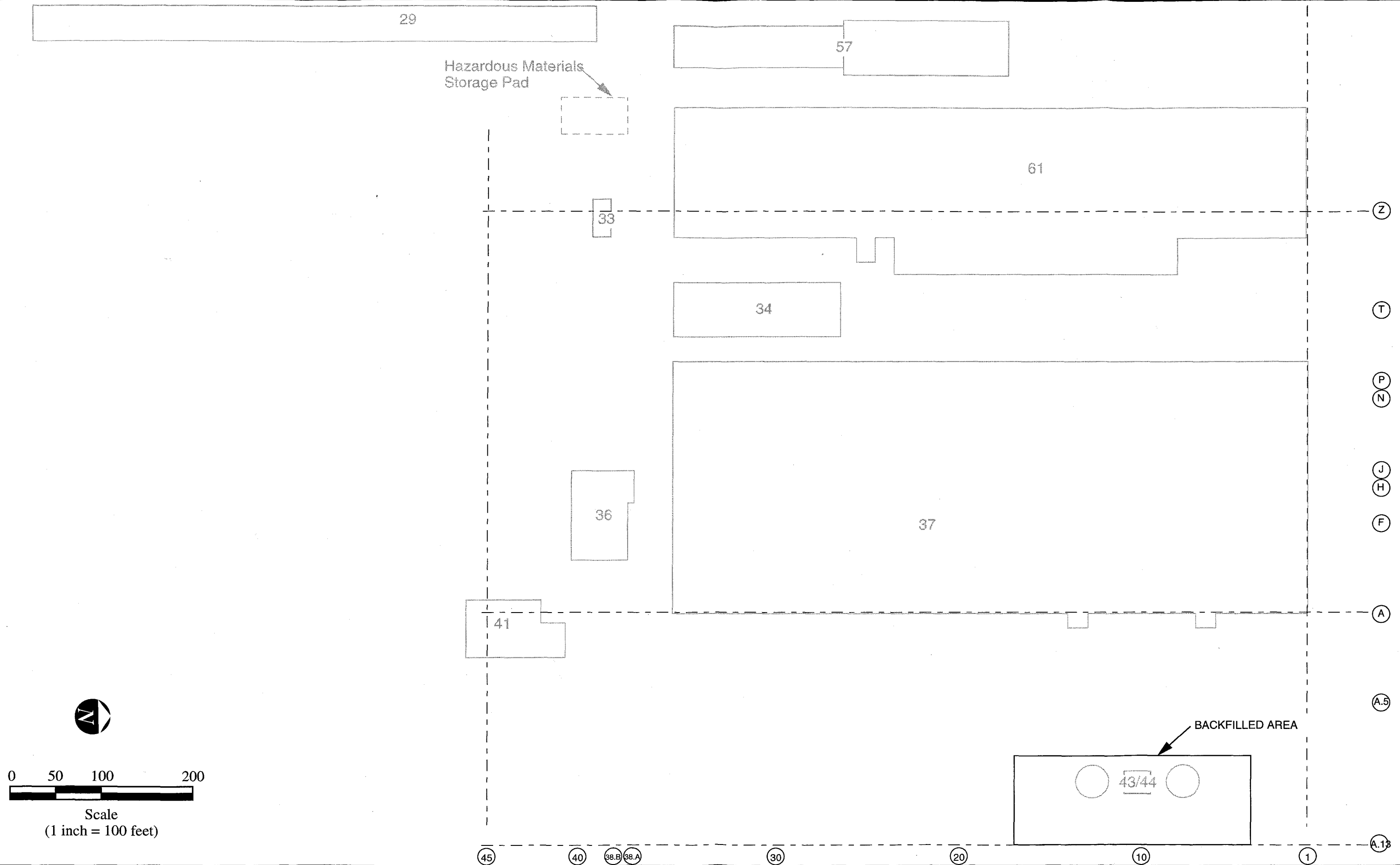
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FIGURE 8
Soil Screening Evaluation Process - Residual Soil



6rMDRC/BACKFILL/STOCKPIL/10thpl/fig9

BOE-C6-0063047



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Soil Backfill Location

FIGURE 9

Tables



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TABLE 1**Summary of Soil Sample Analytical Methods**

Sample Type	EPA Method	Analyte
Grid Sample	418.1	TRPH (a)
	6000/7000	Metals
	8260	VOCs (b)
	8270	SVOCs (b)
Hot Spot Sample	418.1	TRPH (a)
	6000/7000	Metals
	8260	VOCs (b)
	8270	SVOCs (b)
Land Treatment Unit Sample	8080	PCBs (b)
	6000/7000	Metals
	8260	VOCs
Confirmation Sample	8270	SVOCs
	6000/7000	Metals
	8270	SVOCs (b)

Notes:

TRPH Total Recoverable Petroleum Hydrocarbons

VOCs Volatile Organic Compounds

SVOCs Semi-volatile Organic Compounds

PCBs Polychlorinated Biphenyls

(a) Samples exhibiting TRPH concentration greater than 10,000 mg/kg were submitted for carbon chain analysis.

(b) Samples were selectively analyzed for these analytes.

TABLE 2
Analytical Data Summary
Remedial Excavation B45T-RE-1 Excavated Hot Spot Sample

		Sample Number, Collection Date, Grid Location and Depth		
		B45T-GS-4-2'		
		8/21/97		
		A.10-59 @ 2' beneath feedpipe		
Analyte	EPA Method			
TRPH (mg/kg)	418.1	<8.00		
Title 22 Metals (mg/kg)				
Antimony	6010	<5.00		
Arsenic	6010	15.00 #		
Barium	6010	90.00		
Beryllium	6010	<0.10		
Cadmium	6010	<0.10		
Chromium (VI)	7196	<0.50		
Chromium (total)	6010	21.00		
Cobalt	6010	7.60		
Copper	6010	11.00		
Lead (total)	6010	<1.00		
Mercury	7471	<0.01		
Molybdenum	6010	<0.50		
Nickel	6010	8.60		
Selenium	6010	<1.00		
Silver	6010	<0.10		
Thallium	6010	<5.00		
Vanadium	6010	27.00		
Zinc	6010	33.00		
VOCs (µg/kg)	8260	--		
SVOCs (µg/kg)	8270	--		
Carbon Chain Range (mg/kg)	8015m	--		
PCBs (µg/kg)	8080	--		

mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
mg/L = milligrams per liter
-- = not analyzed
ND = not detected
PCBs = Polychlorinated biphenyls

VOCs = Volatile Organic Compounds
SVOCs = Semi-volatile Organic Compounds
TRPH = Total Recoverable Petroleum Hydrocarbons
TTLC = California Total Threshold Limit Concentration
STLC = California Soluble Threshold Limit Concentration
= Exceeds Screening Value

* Refer to Figure 5 for sample location

** STLC is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 15 are Reported in mg/kg

TABLE 3
Analytical Data Summary
Remedial Excavation OA2-RE-1 Excavated Grid Sample

		Sample Number, Collection Date, Grid Location and Depth		
		OA2-A.6-53-1'		
		9/15/97		
		A.6-53 @ 1' bgs*		
Analyte	EPA Method			
TRPH (mg/kg)	418.1	540.00	Regulatory Levels	
Title 22 Metals (mg/kg)			TTLC (mg/kg)	STLC (mg/L)
Antimony	6010	<5.00	500	15
Arsenic	6010	30.00 #	500	5
Barium	6010	60.00	10,000	100
Beryllium	6010	<0.10	75	0.75
Cadmium	6010	<0.10	100	1
Chromium (VI)	7196	<0.50	500	5
Chromium (total)	6010	28.00	2,500	5 **
Cobalt	6010	9.60	8,000	80
Copper	6010	14.00	2,500	25
Lead (total)	6010	<1.00	1,000	5
Mercury	7471	<0.01	20	0.2
Molybdenum	6010	<0.50	3,500	350
Nickel	6010	11.00	2,000	20
Selenium	6010	<1.00	100	1
Silver	6010	<0.10	500	5
Thallium	6010	<5.00	700	7
Vanadium	6010	20.00	2,400	24
Zinc	6010	58.00	5,000	250
VOCs (µg/kg)	8260	--		
SVOCs (µg/kg)	8270	--		
Carbon Chain Range (mg/kg)	8015m	--		
PCBs (µg/kg)	8080	--		

mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
mg/L = milligrams per liter
-- = not analyzed
bgs = below ground surface
ND = not detected
PCBs = Polychlorinated biphenyls

VOCs = Volatile Organic Compounds
SVOCs = Semi-volatile Organic Compounds
TRPH = Total Recoverable Petroleum Hydrocarbons
TTLC = California Total Threshold Limit Concentration
STLC = California Soluble Threshold Limit Concentration
= Exceeds Screening Value

* Refer to Figure 5 for sample location

** STLC is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 15 are Reported in mg/kg

TABLE 4
Analytical Data Summary
Remedial Excavation OA2-RE-2 Excavated Hot Spot Sample

Analyte		EPA Method	Sample Number, Collection Date, Grid Location and Depth		
			OA2-GS-1-1' 9/12/97 A.6-49.5 @ 1' bgs*		
TRPH (mg/kg)		418.1	1,100.00		
Title 22 Metals (mg/kg)				Regulatory Levels	
				TTLC (mg/kg)	STLC (mg/L)
Antimony	6010		<5.00	500	15
Arsenic	6010		18.00 #	500	5
Barium	6010		39.00	10,000	100
Beryllium	6010		<0.10	75	0.75
Cadmium	6010		5.90	100	1
Chromium (VI)	7196		<0.50	500	5
Chromium (total)	6010		33.00	2,500	5 **
Cobalt	6010		11.00	8,000	80
Copper	6010		17.00	2,500	25
Lead (total)	6010		<1.00	1,000	5
Mercury	7471		<0.01	20	0.2
Molybdenum	6010		7.00	3,500	350
Nickel	6010		33.00	2,000	20
Selenium	6010		<1.00	100	1
Silver	6010		<0.10	500	5
Thallium	6010		<5.00	700	7
Vanadium	6010		38.00	2,400	24
Zinc	6010		54.00	5,000	250
VOCs (µg/kg)		8260	ND		
SVOCs (1) (µg/kg)					
Butyl benzyl phthalate	8270		310.00		
Carbon Chain Range (mg/kg)		8015m	--		
PCBs (µg/kg)		8080	--		

mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
mg/L = milligrams per liter
-- = not analyzed
bgs = below ground surface
ND = not detected
PCBs = Polychlorinated biphenyls

VOCs = Volatile Organic Compounds
SVOCs = Semi-volatile Organic Compounds
TRPH = Total Recoverable Petroleum Hydrocarbons
(1) SVOCs not listed were not detected
TTLC = California Total Threshold Limit Concentration
STLC = California Soluble Threshold Limit Concentration
= Exceeds Screening Value

* Refer to Figure 5 for sample location

** STLC is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 15 are Reported in mg/kg

TABLE 5
Analytical Data Summary
Remedial Excavation OA2-RE-3 Excavated Grid Sample

Analyte		Sample Number, Collection Date, Grid Location and Depth		
		OA2-A.6-52-1' 9/15/97 A.6-52 @ 1' bgs*		
EPA Method				
TRPH (mg/kg)		418.1	490.00	Regulatory Levels
				TTL
				STLC
Title 22 Metals (mg/kg)				(mg/kg)
				(mg/L)
Antimony	6010	<5.00	500	15
Arsenic	6010	110.00 (2)(3)#	500	5
Barium	6010	89.00	10,000	100
Beryllium	6010	<0.10	75	0.75
Cadmium	6010	2.40	100	1
Chromium (VI)	7196	<0.50	500	5
Chromium (total)	6010	26.00	2,500	5 **
Cobalt	6010	8.20	8,000	80
Copper	6010	9.30	2,500	25
Lead (total)	6010	<1.00	1,000	5
Mercury	7471	<0.01	20	0.2
Molybdenum	6010	<0.50	3,500	350
Nickel	6010	9.70	2,000	20
Selenium	6010	<1.00	100	1
Silver	6010	<0.10	500	5
Thallium	6010	<5.00	700	7
Vanadium	6010	24.00	2,400	24
Zinc	6010	38.00	5,000	250
VOCs (µg/kg)		8260	ND	
SVOCs (1) (µg/kg)				
Bis (2-Ethylhexyl)Phthalate	8270	140.00		
Carbon Chain Range (mg/kg)		8015m	--	
PCBs (µg/kg)		8080	--	

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

mg/L = milligrams per liter

-- = not analyzed

bgs = below ground surface

ND = not detected

PCBs = Polychlorinated biphenyls

VOCs = Volatile Organic Compounds

SVOCs = Semi-volatile Organic Compounds

TRPH = Total Recoverable Petroleum Hydrocarbons

TTL = California Total Threshold Limit Concentration

STLC = California Soluble Threshold Limit Concentration

= Exceeds Screening Value

(1) SVOCs not listed were not detected

(2) Waste Extraction Test performed on this sample. Result was 5.3 mg/L.

(3) TCLP analysis performed on this sample. Result was <1.0 mg/L.

* Refer to Figure 5 for sample location

** STLC is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 15 are Reported in mg/kg

TABLE 6
Analytical Data Summary
Land Treatment Unit PH-LTU-1B Sample

		Sample Number and Collection Date		
		PH-LTU1-GS-1 1/6/98		
Analyte	EPA Method			
TRPH (mg/kg)	418.1	--		
		Regulatory Levels		
		TTLC (mg/kg)STLC (mg/L)		
Title 22 Metals (mg/kg)				
Antimony	6010	<5.0050015		
Arsenic	6010	<1.005005		
Barium	6010	100.0010,000100		
Beryllium	6010	0.62750.75		
Cadmium	6010	<0.101001		
Chromium (VI)	7196	<0.505005		
Chromium (total)	6010	23.002,5005 **		
Cobalt	6010	7.308,00080		
Copper	6010	15.002,50025		
Lead (total)	6010	2.801,0005		
Mercury	7471	<0.01200.2		
Molybdenum	6010	<0.503,500350		
Nickel	6010	7.802,00020		
Selenium	6010	<1.001001		
Silver	6010	<0.105005		
Thallium	6010	<5.007007		
Vanadium	6010	33.002,40024		
Zinc	6010	36.005,000250		
VOCs (1) (µg/kg)				
sec-Butylbenzene	8260	3.10		
SVOCs (µg/kg)	8270	ND		
Carbon Chain Range (mg/kg)	8015m	--		
PCBs (µg/kg)	8080	--		

mg/ka = milligrams per kilogram
µg/kg = micrograms per kilogram
mg/L = milligrams per liter
-- = not analyzed
ND = not detected
PCBs = Polychlorinated biphenyls

VOCs = Volatile Organic Compounds
SVOCs = Semi-volatile Organic Compounds
TRPH = Total Recoverable Petroleum Hydrocarbons
TTLC = California Total Threshold Limit Concentration
STLC = California Soluble Threshold Limit Concentration
(1) VOCs not listed were not detected

* Refer to Figure 4 for sample location

** STLC is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 15 are Reported in mg/kg

TABLE 7
Analytical Data Summary
Remedial Excavation B41-RE-2 Excavated Hot Spot Sample

		Sample Number, Collection Date, Grid Location and Depth		
		B41-GS-7-1'		
		9/30/97		
		A.2-46.5 @ 1' bgs*		
Analyte	EPA Method			
TRPH (mg/kg)	418.1	33.00		
Title 22 Metals (mg/kg)				
Antimony	6010	<5.00		
Arsenic	6010	22.00 #		
Barium	6010	85.00		
Beryllium	6010	<0.10		
Cadmium	6010	<0.10		
Chromium (VI)	7196	<0.50		
Chromium (total)	6010	20.00		
Cobalt	6010	6.10		
Copper	6010	35.00		
Lead (total)	6010	22.00		
Mercury	7471	<0.01		
Molybdenum	6010	<0.50		
Nickel	6010	8.80		
Selenium	6010	<1.00		
Silver	6010	<0.10		
Thallium	6010	<5.00		
Vanadium	6010	26.00		
Zinc	6010	28.00		
VOCs (1) (µg/kg)				
1,1-Dichloroethene	8260	2.90		
SVOCs (1) (µg/kg)				
Acenaphthene	8270	370.00		
Anthracene	8270	1,600.00		
Benzo (a) Anthracene	8270	2,600.00		
Benzo (b) Fluoranthene	8270	2,700.00		
Benzo (k) Fluoranthene	8270	660.00		
Benzo (g,h,i) Perylene	8270	1,200.00		
Benzo (a) Pyrene	8270	1,900.00 #		
Chrysene	8270	2,000.00		
Dibenz (a,h) Anthracene	8270	410.00		
Dibenzofuran	8270	540.00		
Fluoranthene	8270	4,700.00		
Fluorene	8270	800.00		
Indeno(1,2,3-cd)Pyrene	8270	1,000.00		
2-Methylnaphthalene	8270	130.00		
Naphthalene	8270	130.00		
Phenanthrene	8270	5,300.00		
Pyrene	8270	4,800.00		
Carbon Chain Range (mg/kg)	8015m	--		
PCBs (µg/kg)	8080	--		

mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
mg/L = milligrams per liter
-- = not analyzed
bgs = below ground surface
ND = not detected
PCBs = Polychlorinated biphenyls

VOCs = Volatile Organic Compounds
SVOCs = Semi-volatile Organic Compounds
TRPH = Total Recoverable Petroleum Hydrocarbons
(1) VOCs and SVOCs not listed were not detected
TTLc = California Total Threshold Limit Concentration
STLC = California Soluble Threshold Limit Concentration
= Exceeds Screening Value

* Refer to Figure 5 for sample location

** STLC is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 15 are Reported in mg/kg

TABLE 8
Analytical Data Summary
Remedial Excavation B66A-RE-1 Excavated Hot Spot Samples

		Sample Number, Collection Date, Grid Location and Depth			
		B66AC1-GS-1-2' 9/30/97 A.7/A.8-65 @ 2' bgs*	B66AC1-GS-2-2' 9/30/97 A.7-65.5 @ 2' bgs*		
Analyte	EPA Method				
TRPH (mg/kg)	418.1	950.00	3,100.00	Regulatory Levels	
				TTLc	STLC
Title 22 Metals (mg/kg)				(mg/kg)	(mg/L)
Antimony	6010	<5.00	<5.00	500	15
Arsenic	6010	21.00 #	12.00	500	5
Barium	6010	79.00	90.00	10,000	100
Beryllium	6010	<0.10	<0.10	75	0.75
Cadmium	6010	<0.10	<0.10	100	1
Chromium (VI)	7196	<0.50	<0.50	500	5
Chromium (total)	6010	38.00	52.00 (2)(3)	2,500	5 **
Cobalt	6010	5.80	6.00	8,000	80
Copper	6010	12.00	22.00	2,500	25
Lead (total)	6010	<1.00	1.90	1,000	5
Mercury	7471	<0.01	<0.01	20	0.2
Molybdenum	6010	<0.50	<0.50	3,500	350
Nickel	6010	7.60	10.00	2,000	20
Selenium	6010	<1.00	<1.00	100	1
Silver	6010	<0.10	<0.10	500	5
Thallium	6010	<5.00	<5.00	700	7
Vanadium	6010	27.00	27.00	2,400	24
Zinc	6010	39.00	56.00	5,000	250
VOCs (1) (µg/kg)					
Ethylbenzene	8260	--	210.00		
Total Xylenes	8260	--	1,400.00		
cis-1,2-Dichloroethene	8260	--	1,600.00		
Isopropylbenzene	8260	--	380.00		
n-Propylbenzene	8260	--	1,100.00		
1,3,5-Trimethylbenzene	8260	--	2,400.00		
tert-Butylbenzene	8260	--	410.00		
1,2,4-Trimethylbenzene	8260	--	6,000.00		
sec-Butylbenzene	8260	--	1,100.00		
p-Isopropyltoluene	8260	--	1,100.00		
n-Butylbenzene	8260	--	1,400.00		
Naphthalene	8260	--	92.00		
SVOCs (1) (µg/kg)					
bis (2-Ethylhexyl)phthalate	8270	--	5,200.00		
Carbon Chain Range (mg/kg)	8015m	--	--		
PCBs (µg/kg)	8080	--	ND		

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

mg/L = milligrams per liter

-- = not analyzed

bgs = below ground surface

ND = not detected

PCBs = Polychlorinated biphenyls

VOCs = Volatile Organic Compounds

SVOCs = Semi-volatile Organic Compounds

TRPH = Total Recoverable Petroleum Hydrocarbons

TTLC = California Total Threshold Limit Concentration

STLC = California Soluble Threshold Limit Concentration

= Exceeds Screening Value

(1) VOCs and SVOCs not listed were not detected

(2) Waste Extraction Test performed on this sample. Result was 0.22 mg/L.

(3) TCLP analysis performed on this sample. Result was <0.1 mg/L.

* Refer to Figure 5 for sample locations

** STLC is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 15 are Reported in mg/kg

TABLE 9
Analytical Data Summary
Remedial Excavation B45T-RE-1 Confirmation Sample

Analyte		Sample Number, Collection Date, Grid Location and Depth		
		B45T-GS-5-4' 12/16/97 A.10-59 @ 4' bgs		
EPA Method				
TRPH (mg/kg)		418.1	--	Regulatory Levels
Title 22 Metals (mg/kg)				TTLc (mg/kg) STLc (mg/L)
Antimony	6010	<5.00		500 15
Arsenic	6010	1.10		500 5
Barium	6010	89.00		10,000 100
Beryllium	6010	<0.10		75 0.75
Cadmium	6010	<0.10		100 1
Chromium (VI)	7196	<0.50		500 5
Chromium (total)	6010	14.00		2,500 5 **
Cobalt	6010	6.80		8,000 80
Copper	6010	13.00		2,500 25
Lead (total)	6010	3.00		1,000 5
Mercury	7471	<0.01		20 0.2
Molybdenum	6010	<0.50		3,500 350
Nickel	6010	7.70		2,000 20
Selenium	6010	<1.00		100 1
Silver	6010	<0.10		500 5
Thallium	6010	<5.00		700 7
Vanadium	6010	26.00		2,400 24
Zinc	6010	27.00		5,000 250
VOCs (µg/kg)		8260	--	
SVOCs (µg/kg)		8270	--	
Carbon Chain Range (mg/kg)		8015m	--	
PCBs (µg/kg)		8080	--	

mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
mg/L = milligrams per liter
-- = not analyzed
bgs = below ground surface
ND = not detected
PCBs = Polychlorinated biphenyls

VOCs = Volatile Organic Compounds
SVOCs = Semi-volatile Organic Compounds
TRPH = Total Recoverable Petroleum Hydrocarbons
TTLc = California Total Threshold Limit Concentration
STLc = California Soluble Threshold Limit Concentration

* Refer to Figure 6 for sample location

** STLc is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 15 are Reported in mg/kg

TABLE 10
Analytical Data Summary
Remedial Excavation OA2-RE-1 Confirmation Sample

		Sample Number, Collection Date, Grid Location and Depth		
		OA2-GS-2-3' 12/16/97 A.6-53 @ 3' bgs*		
Analyte	EPA Method			
TRPH (mg/kg)	418.1	--		Regulatory Levels
				TTLC (mg/kg)
Title 22 Metals (mg/kg)				STLC (mg/L)
Antimony	6010	<5.00		500
Arsenic	6010	<1.00		5
Barium	6010	89.00		10,000
Beryllium	6010	<0.10		75
Cadmium	6010	<0.10		100
Chromium (VI)	7196	<0.50		500
Chromium (total)	6010	16.00		5 **
Cobalt	6010	8.10		8,000
Copper	6010	12.00		2,500
Lead (total)	6010	2.80		1,000
Mercury	7471	<0.01		20
Molybdenum	6010	<0.50		3,500
Nickel	6010	8.50		2,000
Selenium	6010	<1.00		100
Silver	6010	<0.10		500
Thallium	6010	<5.00		700
Vanadium	6010	30.00		2,400
Zinc	6010	28.00		5,000
VOCs (ug/kg)	8260	--		
SVOCs (ug/kg)	8270	--		
Carbon Chain Range (mg/kg)	8015m	--		
PCBs (ug/kg)	8080	--		

mg/kg = milligrams per kilogram
 µg/kg = micrograms per kilogram
 mg/L = milligrams per liter
 -- = not analyzed
 bgs = below ground surface
 ND = not detected
 PCBs = Polychlorinated biphenyls

VOCs = Volatile Organic Compounds
SVOCs = Semi-volatile Organic Compounds
TRPH = Total Recoverable Petroleum Hydrocarbons
TTLC = California Total Threshold Limit Concentration
STLC = California Soluble Threshold Limit Concentration

* Refer to Figure 6 for sample location

** STLC is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 15 are Reported in mg/kg

TABLE 11
Analytical Data Summary
Remedial Excavation OA2-RE-2 Confirmation Sample

Analyte		Sample Number, Collection Date, Grid Location and Depth		
		OA2-GS-3-8' 12/16/97 A.6-49.5 @ 8' bgs*		
EPA Method				
TRPH (mg/kg)		418.1	--	Regulatory Levels
Title 22 Metals (mg/kg)				TTLc (mg/kg)
				STLC (mg/L)
Antimony	6010	<5.00		500
Arsenic	6010	1.70		5
Barium	6010	81.00		10,000
Beryllium	6010	<0.10		75
Cadmium	6010	0.17		100
Chromium (VI)	7196	<0.50		500
Chromium (total)	6010	15.00		2,500
Cobalt	6010	7.70		8,000
Copper	6010	23.00		2,500
Lead (total)	6010	3.00		1,000
Mercury	7471	<0.01		20
Molybdenum	6010	<0.50		3,500
Nickel	6010	13.00		2,000
Selenium	6010	<1.00		100
Silver	6010	<0.10		500
Thallium	6010	<5.00		700
Vanadium	6010	29.00		2,400
Zinc	6010	33.00		5,000
VOCs (µg/kg)		8260	--	
SVOCs (µg/kg)		8270	--	
Carbon Chain Range (mg/kg)		8015m	--	
PCBs (µg/kg)		8080	--	

mg/kg = milligrams per kilogram
 µg/kg = micrograms per kilogram
 mg/L = milligrams per liter
 -- = not analyzed
 bgs = below ground surface
 ND = not detected
 PCBs = Polychlorinated biphenyls

VOCs = Volatile Organic Compounds
 SVOCs = Semi-volatile Organic Compounds
 TRPH = Total Recoverable Petroleum Hydrocarbons
 TTLc = California Total Threshold Limit Concentration
 STLC = California Soluble Threshold Limit Concentration

* Refer to Figure 6 for sample location

** STLC is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 15 are Reported in mg/kg

TABLE 12
Analytical Data Summary
Remedial Excavation OA2-RE-3 Confirmation Sample

Analyte		EPA Method	Sample Number, Collection Date, Grid Location and Depth		
			OA2-GS-4-9' 12/17/97 A.6-52 @ 9' bgs*		
TRPH (mg/kg)		418.1	--		
Title 22 Metals (mg/kg)				Regulatory Levels	
				TTL	STLC
				(mg/kg)	(mg/L)
Antimony	6010	<5.00	500	15	
Arsenic	6010	1.30	500	5	
Barium	6010	82.00	10,000	100	
Beryllium	6010	<0.10	75	0.75	
Cadmium	6010	0.16	100	1	
Chromium (VI)	7196	<0.50	500	5	
Chromium (total)	6010	18.00	2,500	5 **	
Cobalt	6010	7.20	8,000	80	
Copper	6010	18.00	2,500	25	
Lead (total)	6010	2.80	1,000	5	
Mercury	7471	<0.01	20	0.2	
Molybdenum	6010	<0.50	3,500	350	
Nickel	6010	12.00	2,000	20	
Selenium	6010	<1.00	100	1	
Silver	6010	<0.10	500	5	
Thallium	6010	<5.00	700	7	
Vanadium	6010	27.00	2,400	24	
Zinc	6010	32.00	5,000	250	
VOCs (µg/kg)		8260	--		
SVOCs (µg/kg)		8270	--		
Carbon Chain Range (mg/kg)		8015m	--		
PCBs (µg/kg)		8080	--		

mg/kg = milligrams per kilogram
 µg/kg = micrograms per kilogram
 mg/L = milligrams per liter
 -- = not analyzed
 bgs = below ground surface
 ND = not detected
 PCBs = Polychlorinated biphenyls

VOCs = Volatile Organic Compounds
 SVOCs = Semi-volatile Organic Compounds
 TRPH = Total Recoverable Petroleum Hydrocarbons
 TTL = California Total Threshold Limit Concentration
 STLC = California Soluble Threshold Limit Concentration

* Refer to Figure 6 for sample location

** STLC is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 15 are Reported in mg/kg

TABLE 13
Analytical Data Summary
Remedial Excavation B41-RE-2 Confirmation Sample

Analyte		EPA Method	Sample Number, Collection Date, Grid Location and Depth		
			B41-GS-14-5' 12/17/97 A.2-46.5 @ 5' bgs*		
TRPH (mg/kg)		418.1	--		
Title 22 Metals (mg/kg)				Regulatory Levels	
				TTLIC (mg/kg)	STLC (mg/L)
Antimony	6010	<5.00		500	15
Arsenic	6010	<1.00		500	5
Barium	6010	77.00		10,000	100
Beryllium	6010	<0.10		75	0.75
Cadmium	6010	<0.10		100	1
Chromium (VI)	7196	<0.50		500	5
Chromium (total)	6010	14.00		2,500	5 **
Cobalt	6010	6.70		8,000	80
Copper	6010	12.00		2,500	25
Lead (total)	6010	1.80		1,000	5
Mercury	7471	<0.01		20	0.2
Molybdenum	6010	<0.50		3,500	350
Nickel	6010	8.40		2,000	20
Selenium	6010	<1.00		100	1
Silver	6010	<0.10		500	5
Thallium	6010	<5.00		700	7
Vanadium	6010	26.00		2,400	24
Zinc	6010	27.00		5,000	250
VOCs (µg/kg)		8260	--		
SVOCs (1) (µg/kg)					
Acenaphthene	8270	130.00			
Anthracene	8270	220.00			
Benzo (a) Anthracene	8270	350.00			
Benzo (a) Pyrene	8270	310.00			
Chrysene	8270	620.00			
Fluoranthene	8270	190.00			
Fluorene	8270	210.00			
Phenanthrene	8270	230.00			
Pyrene	8270	1,800.00			
Carbon Chain Range (mg/kg)		8015m	--		
PCBs (µg/kg)		8080	--		

mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
mg/L = milligrams per liter
-- = not analyzed
bgs = below ground surface
ND = not detected
PCBs = Polychlorinated biphenyls

VOCs = Volatile Organic Compounds
SVOCs = Semi-volatile Organic Compounds
TRPH = Total Recoverable Petroleum Hydrocarbons
(1) SVOCs not listed were not detected
TTLIC = California Total Threshold Limit Concentration
STLC = California Soluble Threshold Limit Concentration

* Refer to Figure 6 for sample location

** STLC is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 15 are Reported in mg/kg

TABLE 14
Analytical Data Summary
Remedial Excavation B66A-RE-1 Confirmation Sample

		Sample Number, Collection Date, Grid Location and Depth		
		B66AC1-GS-3-12'		
		12/17/97		
		A.7/A.8-65 @ 12' bgs*		
Analyte	EPA Method			
TRPH (mg/kg)	418.1	--		
Title 22 Metals (mg/kg)				
Antimony	6010	<5.00	TTLc (mg/kg)	STLC (mg/L)
Arsenic	6010	<1.00	500	15
Barium	6010	39.00	10,000	100
Beryllium	6010	<0.10	75	0.75
Cadmium	6010	<0.10	100	1
Chromium (VI)	7196	<0.50	500	5
Chromium (total)	6010	7.20	2,500	5 **
Cobalt	6010	3.80	8,000	80
Copper	6010	7.70	2,500	25
Lead (total)	6010	1.10	1,000	5
Mercury	7471	<0.01	20	0.2
Molybdenum	6010	<0.50	3,500	350
Nickel	6010	5.30	2,000	20
Selenium	6010	<1.00	100	1
Silver	6010	<0.10	500	5
Thallium	6010	<5.00	700	7
Vanadium	6010	14.00	2,400	24
Zinc	6010	15.00	5,000	250
VOCs (µg/kg)	8260	--		
SVOCs (µg/kg)	8270	--		
Carbon Chain Range (mg/kg)	8015m	--		
PCBs (µg/kg)	8080	--		

mg/kg = milligrams per kilogram
 µg/kg = micrograms per kilogram
 mg/L = milligrams per liter
 -- = not analyzed
 bgs = below ground surface
 ND = not detected
 PCBs = Polychlorinated biphenyls

VOCs = Volatile Organic Compounds
SVOCs = Semi-volatile Organic Compounds
TRPH = Total Recoverable Petroleum Hydrocarbons
TTLC = California Total Threshold Limit Concentration
STLC = California Soluble Threshold Limit Concentration

* Refer to Figure 6 for sample location

** STLC is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 15 are Reported in mg/kg

TABLE 15
Site-Specific Health-Based Soil Screening Values for
Organic Constituents Soil Exposure Pathways (mg/kg)
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Constituent	Construction Worker Initial Value	Commercial/ Industrial User Initial Value	Final Value
1-butanol	1.98E+04	3.46E+04	1.98E+04
1,1-dichloroethane	2.23E+03	1.10E+03	1.10E+03
1,1-dichloroethene	1.57E+01	4.21E+00	4.21E+00
1,1,1,2-tetrachloroethane	4.98E+02	1.44E+04	4.98E+02
1,1,2-trichloroethane	2.23E+02	1.26E+03	2.23E+02
1,1,2,2-tetrachloroethane	6.25E+01	1.50E+03	6.25E+01
1,2-dibromo-3-chloropropane	2.42E+00	7.47E+01	2.42E+00
1,2-dibromoethane	4.86E+00	1.84E+02	4.86E+00
1,2-dichlorobenzene	NA	2.64E+06	2.64E+06
1,2-dichloroethane	2.06E+02	2.66E+02	2.06E+02
1,2-dichloropropane	3.37E+01	7.25E+00	7.25E+00
1,2-diphenylhydrazine	2.03E+01	2.36E+08	2.03E+01
1,2,3-trichloropropane	2.39E+00	4.08E+01	2.39E+00
1,2,4-trichlorobenzene	1.74E+02	4.74E+07	1.74E+02
1,3-dichloropropene	4.83E+01	6.63E+02	4.83E+01
1,4-dichlorobenzene	4.32E+02	4.37E+04	4.32E+02
2-butanone	3.28E+04	2.35E+06	3.28E+04
2-chlorophenol	8.57E+02	1.17E+06	8.57E+02
2-methylphenol	8.66E+03	7.59E+07	8.66E+03
2-naphthylamine	9.81E+00	1.63E+06	9.81E+00
2,4-dichlorophenol	5.21E+01	2.22E+07	5.21E+01
2,4-dimethylphenol	3.48E+03	4.37E+08	3.48E+03
2,4-dinitrophenol	3.49E+01	7.14E+09	3.49E+01
2,4-dinitrotoluene	3.48E+01	7.62E+06	3.48E+01
2,4,5-trichlorophenol	1.73E+04	2.21E+08	1.73E+04
2,4,6-trichlorophenol	2.52E+02	1.10E+07	2.52E+02
2,6-dinitrotoluene	2.59E+01	4.51E+05	2.59E+01
3,3-dichlorobenzidine	1.47E+01	7.53E+08	1.47E+01
4-chloroaniline	6.93E+01	6.50E+06	6.93E+01
4-methyl-2-pentanone	1.20E+04	6.84E+05	1.20E+04
4-methylphenol	8.69E+01	4.01E+07	8.69E+01
4,4-ddd	1.03E+02	9.97E+08	1.03E+02
4,4-dde	7.28E+01	2.83E+06	7.28E+01
4,4-ddt	1.22E+01	2.26E+08	1.22E+01
acenaphthene	8.10E+03	1.62E+08	8.10E+03
acetone	1.55E+04	4.37E+05	1.55E+04
acrolein	NA	8.05E+01	8.05E+01
acrylonitrile	1.59E+01	7.65E+01	1.59E+01

TABLE 15
Site-Specific Health-Based Soil Screening Values for
Organic Constituents Soil Exposure Pathways (mg/kg)
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Constituent	Construction Worker Initial Value	Commercial/ Industrial User Initial Value	Final Value
aldrin	7.32E-01	2.82E+04	7.32E-01
alpha-bhc	3.93E+00	2.32E+05	3.93E+00
aniline	3.10E+03	1.02E+07	3.10E+03
anthracene	4.06E+03	1.37E+10	4.06E+03
aroclor 1016	NA	7.35E+05	7.35E+05
aroclor 1254	8.70E-01	5.69E+05	8.70E-01
benzene	1.43E+02	1.71E+02	1.43E+02
benzidine	3.52E-02	1.55E+02	3.52E-02
benzoic acid	6.96E+04	6.58E+10	6.96E+04
benzo(a)anthracene	1.14E+01	1.13E+09	1.14E+01
benzo(a)pyrene	1.14E+00	9.56E+07	1.14E+00
benzo(b)fluoranthene	1.14E+01	3.19E+08	1.14E+01
benzo(k)fluoranthene	1.14E+01	9.56E+07	1.14E+01
benzyl alcohol	1.73E+04	3.81E+08	1.73E+04
benzyl chloride	1.00E+02	4.03E+03	1.00E+02
beta-bhc	1.38E+01	9.94E+06	1.38E+01
beta-chloronaphthalene	NA	2.32E+07	2.32E+07
bis(2-chloro-1-methylethyl)ether	2.49E+02	2.93E+04	2.49E+02
bis(2-chloroethyl)ether	6.91E+00	6.91E+02	6.91E+00
bis(2-ethylhexyl)phthalate	2.10E+03	3.59E+09	2.10E+03
bromodichloromethane	1.30E+02	2.94E+03	1.30E+02
bromoform	3.34E+02	1.28E+05	3.34E+02
bromomethane	NA	1.15E+02	1.15E+02
carbazole	8.83E+02	6.66E+08	8.83E+02
carbon disulfide	1.43E+03	7.04E+04	1.43E+03
carbon tetrachloride	9.71E+01	1.35E+02	9.71E+01
chlordane	1.04E+00	1.55E+05	1.04E+00
chlorobenzene	NA	2.83E+04	2.83E+04
chloroform	1.49E+02	9.58E+02	1.49E+02
chloromethane	7.43E+02	7.40E+01	7.40E+01
chrysene	1.14E+02	5.06E+10	1.14E+02
cis-1,2-dichloroethene	1.34E+03	7.51E+03	1.34E+03
cumene	3.79E+03	5.73E+04	3.79E+03
dibenzo(a,h)anthracene	3.35E+00	6.34E+11	3.35E+00
dibromochloromethane	1.50E+02	1.54E+02	1.50E+02
dichlorodifluoromethane	2.14E+03	7.01E+02	7.01E+02
dieldrin	1.22E+00	2.33E+04	1.22E+00
diethyl phthalate	1.39E+05	6.03E+09	1.39E+05
di-n-butylphthalate	1.74E+04	4.19E+08	1.74E+04

TABLE 15
Site-Specific Health-Based Soil Screening Values for
Organic Constituents Soil Exposure Pathways (mg/kg)
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Constituent	Construction Worker Initial Value	Commercial/ Industrial User Initial Value	Final Value
di-n-octylphthalate	3.49E+02	1.80E+10	3.49E+02
endosulfan	1.46E+02	2.14E+08	1.46E+02
endrin	7.33E+00	1.37E+08	7.33E+00
ethyl chloride	1.42E+05	1.57E+06	1.42E+05
ethylbenzene	NA	7.33E+05	7.33E+05
fluoranthene	6.97E+03	3.03E+10	6.97E+03
fluorene	6.94E+03	1.40E+08	6.94E+03
gamma-bhc	2.32E+01	2.63E+05	2.32E+01
heptachlor	2.87E+00	1.78E+03	2.87E+00
heptachlor epoxide	3.14E-01	1.35E+03	3.14E-01
hexachlorobenzene	9.69E+00	2.80E+03	9.69E+00
hexachlorobutadiene	2.24E+02	7.13E+04	2.24E+02
hexachlorocyclopentadiene	8.87E+01	9.79E+02	8.87E+01
hexachloroethane	1.73E+02	2.39E+05	1.73E+02
indeno(1,2,3-cd)pyrene	1.47E+01	1.23E+11	1.47E+01
isobutyl alcohol	4.81E+04	2.55E+06	4.81E+04
isophorone	1.85E+04	2.92E+07	1.85E+04
methoxychlor	8.71E+01	1.48E+09	8.71E+01
methyl methacrylate	1.06E+03	5.56E+04	1.06E+03
methylene bromide	1.51E+03	2.75E+04	1.51E+03
methylene chloride	1.07E+03	1.26E+03	1.07E+03
methyl-tert-butyl ether	NA	1.39E+06	1.39E+06
n-butylbenzyl phthalate	3.48E+03	6.52E+09	3.48E+03
nitroaniline, o-	8.07E+03	2.45E+06	8.07E+03
nitrobenzene	8.61E+01	1.78E+05	8.61E+01
nitrosodiphenylamine, p-	8.02E+02	1.03E+07	8.02E+02
n-nitrosodimethylamine	2.60E-01	1.38E-02	1.38E-02
n-nitroso-di-n-propylamine	2.48E+00	4.46E+02	2.48E+00
n-nitrosodiphenylamine	1.96E+03	4.80E+09	1.96E+03
o-chlorotoluene	3.14E+03	1.05E+05	3.14E+03
p-chloro-m-cresol	3.48E+04	NA	3.48E+04
pentachlorophenol	3.04E+02	3.09E+07	3.04E+02
phenol	1.04E+04	3.14E+09	1.04E+04
pyrene	2.35E+03	4.11E+10	2.35E+03
styrene	3.02E+05	7.58E+06	3.02E+05
tetrachloroethene	3.36E+02	7.52E+03	3.36E+02
toluene	3.12E+04	2.41E+05	3.12E+04
toxaphene	1.47E+01	9.16E+04	1.47E+01
trans-1,2-dichloroethene	2.68E+03	1.47E+04	2.68E+03

TABLE 15
Site-Specific Health-Based Soil Screening Values for
Organic Constituents Soil Exposure Pathways (mg/kg)
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Constituent	Construction Worker Initial Value	Commercial/ Industrial User Initial Value	Final Value
trichloroethene	1.05E+03	1.39E+03	1.05E+03
trichlorofluoromethane	1.03E+04	4.89E+04	1.03E+04
vinyl acetate	5.41E+03	2.31E+05	5.41E+03
vinyl chloride	5.16E+00	1.81E-01	1.81E-01
xlenes	3.26E+04	2.61E+07	3.26E+04

TABLE 15
Site-Specific Health-Based Soil Screening Values for
Inorganic Constituents Soil Exposure Pathways (mg/kg)
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Compound	Initial Value	ILM Background*	Final Value
aluminum	NT	3.63E+04	3.63E+04
antimony	9.05E+00	5.00E+00	9.05E+00
arsenic	8.87E+00	1.40E+01	1.40E+01
barium	2.52E+03	2.81E+02	2.52E+03
beryllium	1.56E+01	7.40E-01	1.56E+01
cadmium	1.64E+01	8.80E-01	1.64E+01
calcium	NT	3.80E+04	3.80E+04
chromium iii	3.22E+04	4.10E+01	3.22E+04
chromium vi	9.73E+01	NA	9.73E+01
cobalt	NT	2.00E+01	2.00E+01
copper	1.26E+03	5.30E+01	1.26E+03
cyanide	6.99E+02	NA	6.99E+02
iron	NT	6.05E+04	6.05E+04
lead	NT	1.11E+02	1.11E+02
mercury	6.78E+00	2.80E-01	6.78E+00
molybdenum	1.24E+03	2.30E+01	1.24E+03
nickel	2.39E+02	2.90E+01	2.39E+02
potassium	NT	8.26E+03	8.26E+03
selenium	1.82E+02	1.24E+03	1.24E+03
silver	1.30E+02	2.39E+02	2.39E+02
sodium	NT	1.96E+03	1.96E+03
thallium	NT	1.10E+01	1.10E+01
titanium	NT	1.95E+03	1.95E+03
vanadium	8.37E+01	8.20E+01	8.37E+01
zinc	8.73E+03	1.98E+02	8.73E+03

NOTES:

*ILM background values provided in Baseline Risk Assessment (G&M 1996).

NT = No Toxicity values available for calculation of HBRG

NA = Not Available.

TABLE 16
Remedial Excavations B45T-RE-1, OA2-RE-1, OA2-RE-2, OA2-RE-3, B41-RE-2, and B66A-RE-1
Excavated Soil Disposition Reference

Land Treatment Unit	Sample ID	Screening Criteria Summary*		Soil Location				
		Non-Haz Waste	Non-RCRA Haz Waste	Backfill Area Boundries**				
				North	East	South	West	Depth (bgs)
PH-LTU-1A	B45T-GS-4-2'	X		4	A.13	17	A.8	4' - 3'
	OA2-A.6-53-1'	X						
	OA2-GS-1-1'	X						
	B41-GS-7-1'	X						
	B66AC1-GS-1-2'	X						
	B66AC1-GS-2-2'							
PH-LTU-1B	PH-LTU1-GS-1			4	A.13	16	A.8	4' - 3'
Portion of PH-LTU-1B	OA2-A.6-52-1'		X	To Be Disposed Off-Site as non-RCRA Hazardous Waste				

* Blank space denotes soil samples which pass all screening criteria.

X Denotes stockpile disposition based on soil sample failing a screening criterion.

bgs = below ground surface

** Refer to Figure 9 for backfill locations